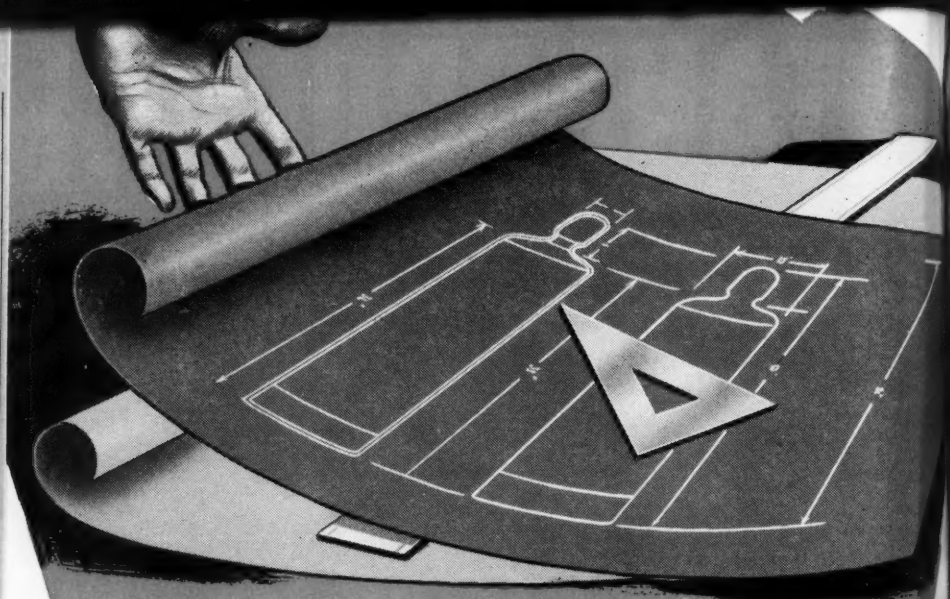
# BUTANE-PROPANE News

HEADQUARTERS FOR LP-GAS INFORMATION SINCE 1931

OCTOBER, 1946



# *Blueprint* FOR CYLINDER SUCCESS

The Hackney L-P Gas Cylinder! What accounts for its amazing popularity? Sound designing, X-ray controlled welding, "two-piece" construction, rigid testing and inspecting. True, all these things contribute to this *blueprint for success*—but most important of all is experience.

For, this experience—the knowledge and skill gathered for 44 years—forms the foundation for the success of Hackney Cylinders. It assures the correct design, the proper balance between light weight and strength, the easy handling and low-cost transportation of liquefied petroleum gas. It is this priceless ingredient that gives the promise for even greater improvements for the future.

There is no substitute for Hackney experience.

Hackney
MILWAUKEE

**Pressed Steel Tank Company**

*Manufacturers of Hackney Products*

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## The NEW ROCKWELL·EMCO No. 00 METER for LP-GAS

with pressure cast aluminum alloy case

Since LP-Gas has a much higher heating value than manufactured or natural gas, the ideal meter for this service should be smaller than a conventional gas meter. It should be easy to repair. It should have a strong outer casing for safety.

All these requirements have been met in the new Rockwell-Emco No. 00 Meter. Within a *compact*, streamlined aluminum alloy housing has been engineered a double diaphragm displacement measuring unit having a capacity of 90 cfh at ½" absorption of 1.5 specific gravity gas. *To simplify service* all working parts are affixed to a removable valve plate permitting complete, economical replacement as a unit without affecting accuracy. *For safety* a lightweight aluminum alloy housing of high fracture resistance is used. It will not rust or corrode. There is only one external gasketed joint to seal.

***Learn all about this revolutionary meter and its many advantages. Write for bulletin or, better still, ask the nearest sales office for an actual demonstration.***

ROCKWELL

**PITTSBURGH EQUITABLE METER DIVISION**

**Rockwell Manufacturing Company**

**Pittsburgh 8, Pa.**

# BUTANE-PROPANE *News*

Reg. U.S. Pat. Off.

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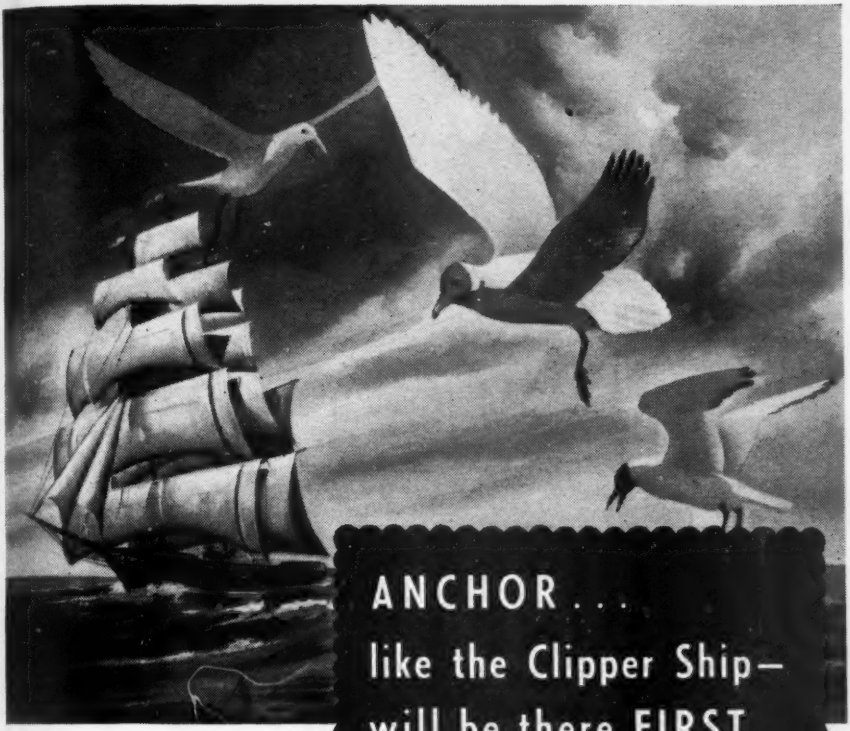


IN its day a clipper ship stood for speed. In our day, speed means ANCHOR!

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PETROLEUM COMPANY
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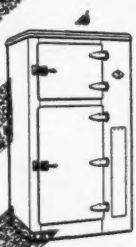
*Twenty years of service*
*to the L-P gas industry...*
*bringing you*

**A FAMILY**
**OF GREAT PRODUCTS**

Servel



***Twenty years ago . . . the first Servel marked***

# Today
# Servel brings you the finest Gas Refrigerator ever built

YES, it's just twenty years ago since L-P dealers offered their customers a revolutionary advance in refrigeration . . . the permanently silent, long-lasting Servel L-P Gas Refrigerator. You may remember how excited your customers were in 1926 about the first automatic, water-cooled Servel. For the first time you dramatically demonstrated the L-P Gas Refrigerator that has no moving parts in its freezing system to wear or get noisy.

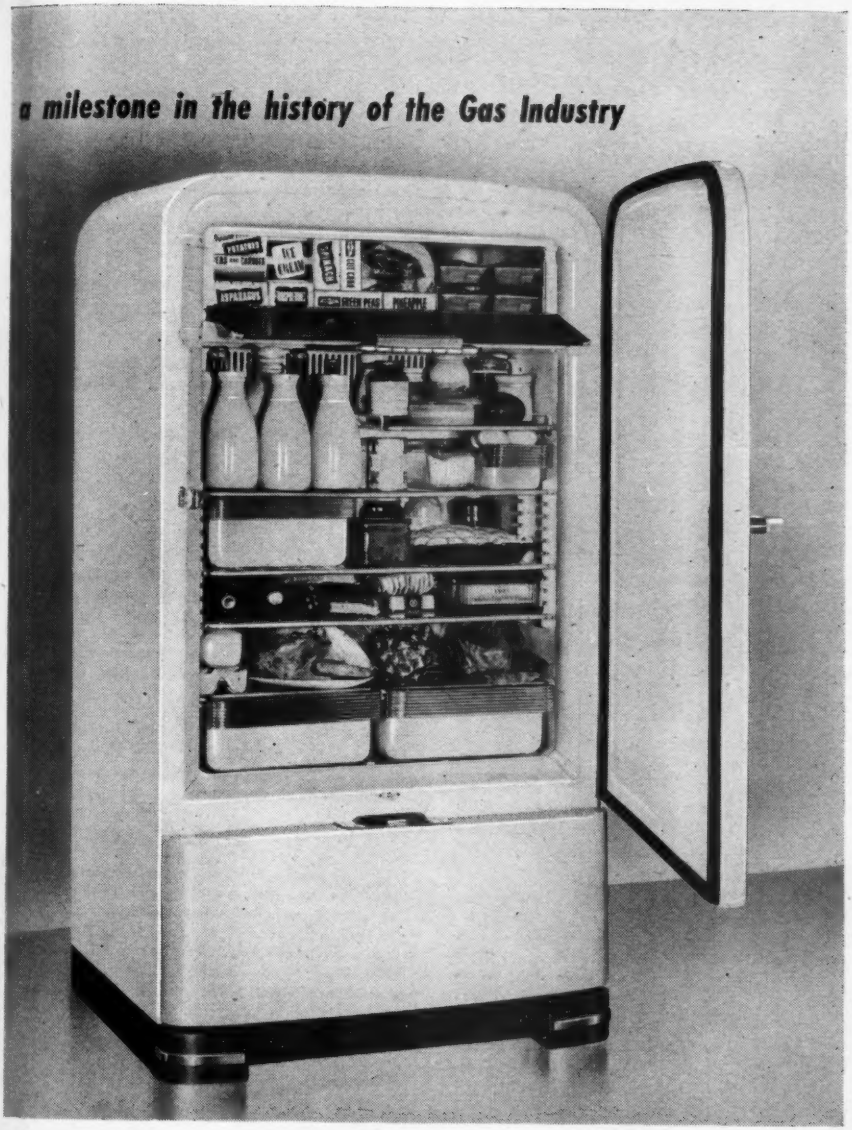
With each succeeding year, you brought your customers a finer, constantly improved Servel. In 1933, you introduced the first air-cooled Servel—the L-P Gas Refrigerator that has proved so popular. Then came such sales-stimulating improvements as non-tipping shelves, dry or moist meat storage, one-piece steel cabinet, trigger release of ice trays, double-action door handle, temperature dial, cold indicator and many others.

Now the finest Servel ever built will soon be rolling off the line. The crowning achievement of twenty years of progress and research in Gas Refrigeration, the great new 1947 Servel will bring your customers the finest in modern food storage. There's lots of space for frozen foods in Servel's big Frozen Food Locker. The 8-cu.-ft. model holds a bushel basketful—up to sixty standard packages of frozen foods. Your customers also get an abundance of ice cubes and constant cold year in, year out. All of Servel's other big features are included in a new, streamlined L-P Gas Refrigerator that will live up to the highest standards of performance and dependability. And, naturally, Servel continues to lead the field with its basically different freezing system. The Servel L-P Gas Refrigerator is still permanently silent, built to last for years, economical to operate.

See the great new 1947 Servel on the stage at the A.G.A. Convention in Atlantic City. You'll agree it *is* the finest Servel ever built . . . and that it dramatizes, as never before, the modernity of L-P Gas and Gas Service.

***and twenty years of progress and research***

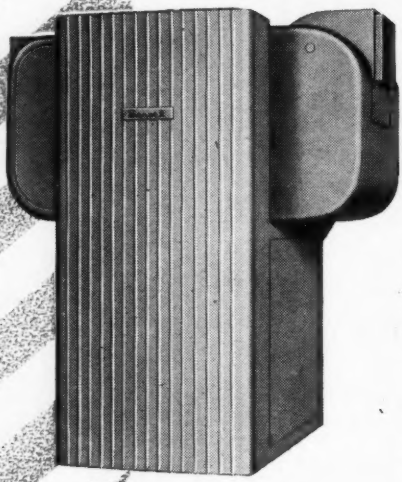
*a milestone in the history of the Gas Industry*



*have added new members to the Servel family*

***Next Servel introduced the...***

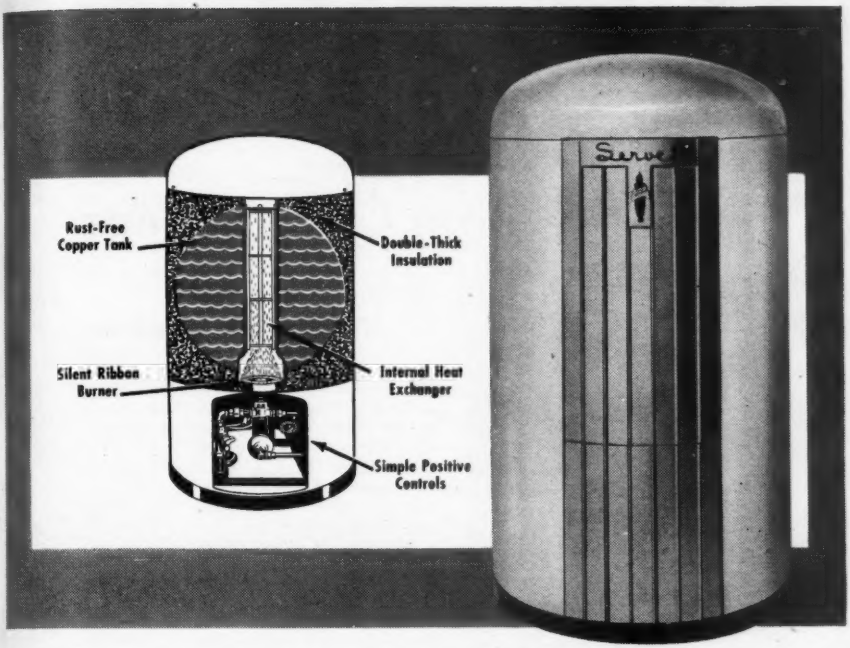
# *All-Year* Gas Air Conditioner



IN 1940 Servel announced the greatest advancement in scientific air conditioning for the modern home—the Servel *All-Year* Gas Air Conditioner. Years of laboratory research plus hundreds of field tests proved that this engineering achievement provides a new concept in living comfort . . . a concept which marks it as the most modern, up-to-date equipment of its kind.

For the Servel *All-Year* Gas Air Conditioner actually creates a "new quality of living" for today's homes and commercial shops. It cools and dehumidifies in summer, heats and humidifies in winter, filters the air and circulates it at room temperature between seasons. All these vital functions are provided by *one unit* . . . all are regulated by one central control, the "Selectrol."

In more than 400 installations—some operating for more than five years—the Servel unit has received wide acclaim for its efficiency, economy, and dependability. Leading financing agents have stated that it keeps homes modern longer. Surveys show that 72 per cent of the people who plan to buy or build homes have said they wanted all-year air conditioning.




## *Now Servel announces a different, finer*

# Gas Water Heater

Now families in your community can enjoy the year-round comfort and convenience of an abundant hot water supply with the new, basically different Servel automatic *Ball-Type* Gas Water Heater. Built from an advanced scientific design, it offers exclusive advantages that will help you demonstrate the modernity of gas as a household fuel.

Unlike ordinary water heaters, the water tank of the Servel is shaped like a ball instead of a cylinder. And a ball is the strongest shape known to science. Here's what this means to your customers:

The extra strength of the Servel automatic *Ball-Type* Gas Water Heater assures added life and durability. This quality gas appliance will also be more economical to operate. For the Servel *Ball-Type* tank *radiates and wastes an average of 18 per cent less heat* through its walls than a conventional cylinder-shaped tank of the same capacity.

These unmatched advantages, together with the others shown above, make the new Servel automatic *Ball-Type* Gas Water Heater the top value in the field. You'll find it's easy to sell . . . requires minimum maintenance throughout its long life.

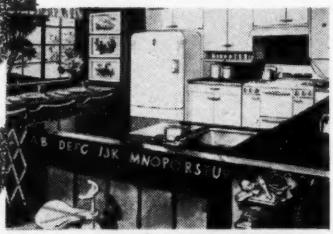
Three De Luxe models—20, 30, and 45 gallons—are now available. These newest additions to the famous Servel family will quickly boost your appliance volume . . . and your L-P gas load, too.

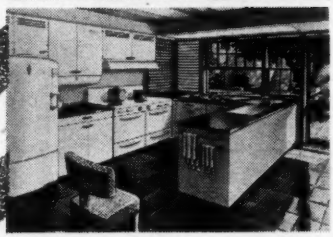
***plus another great promotion***

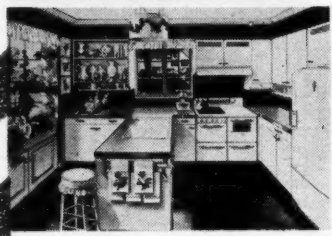
## *Finally, Servel presents . . .*

**SERVEL-DESIGNED**

# New Freedom Gas Kitchens







### *Special Air Control Cabinet Provides Comfort-conditioning*

REALIZING that the future of the domestic gas load depends largely upon a growing acceptance of gas as *the* fuel in the kitchen, Servel in 1945 developed and announced the first complete New Freedom Gas Kitchens.

An outstanding feature of the Servel-designed New Freedom Kitchens is a special Air Control Cabinet built over the gas range. This cabinet comfort-conditions the kitchen . . . provides for the movement of air and removes objectionable cooking odors and moisture. At the same time, it filters out grease and grime resulting from cooking.

L-P dealers have found that these modern kitchens open new scope for selling Kitchens for Family Living. They are backed by a scientific styling and merchandising program that not only promotes kitchen cabinets, but also gas appliances and gas as a fuel.

For 1947, Servel plans to expand into the kitchen field. Model kitchens for display are going forward as fast as possible. Each is uniquely different, interest-provoking, yet completely practical.

★ ★ ★

***BE SURE TO SEE THE GREAT SERVEL EXHIBIT ON THE STAGE AT THE A.G.A. CONVENTION, OCT. 7 TO 11, IN ATLANTIC CITY***

Servel, Inc.

# LETTERS

Gentlemen:

As I am a new member in the propane business I am taking the liberty of asking a question.

Is it all right to vent gas water heaters and space heaters into an attic?

L.C.

Oregon.

This is never good practice. In most communities, it is unlawful because products of combustion which form may result harmfully to the occupants of the house.

From the standpoint of the operation of appliances, it is also inadvisable to so vent. The slightest changes from proper flue venting will have direct effect upon back draft, resulting in impaired burner operation.—Ed.

•

Gentlemen:

I am particularly interested in the subject of tanks and this fuel as it pertains to use by trailer home owners, so if you have any special information treated in back issues or otherwise would like to have it.

L.C.

California.

We have had several stories about the use of butane and propane in trailer cars but copies of these back magazines are not available. LP-Gas is, of course, widely used in such cars and there will be a great increase in this business from now on.—Ed.

•

Gentlemen:

Can you give me the name and address of any firm producing small size fully automatic gas water heaters and gas floor furnaces for operation on butane and suitable for installation in house trailers?

About five gallons storage capacity would be sufficient for the water heater, as overall size and weight are important considerations.

The floor furnace should have capacity for heating from 600 to 700 cubic feet of space. It should not project more than 12 inches below the surface of the floor—even shallower construction would be an advantage. Thermostat control would be an advantage.

Both devices should have a fully automatic cut-off control to prevent flow of gas in the event of the pilot light being extinguished or failure of gas pressure.

I believe there is a large and growing market for devices of this kind in the trailer industry and among trailer owners.

T.F.M.

California.

We have made a canvas of many manufacturers and find nothing in the way of a small water heater that would meet your requirements. I am wondering if the small steam boiler advertised on Pages 4 and 5 of the July issue of "BUTANE-PROPANE *News*" would meet your requirements. It is distributed by the James E. Neighbor Co., 4926 East 12th St., Oakland, Calif.

Floor furnaces are manufactured or handled through the following firms:

Coast to Coast Trailer Supply Co., 823 W. 2nd St., C. L. Davies; Mutual Liquid Gas & Equipment Co., Inc., 3600 W. Imperial Blvd., Inglewood, Calif., J. S. Fagan.

These floor furnaces do not have automatic controls. The fact that the floor furnaces extend into open space below the trailers would seem to give them plenty of vent for escaping fumes, if such should occur, insomuch as LP-Gas vapors are heavier than air. In the event of a leak, of course, there would be some hazard from possible nearby flames due to discarded cigarettes, matches, etc.—Ed.

•

Gentlemen:

I am writing to you to see if I can obtain any books or pamphlets on installing or servicing Servel gas re-

frigerators of the latest type. We are going to convert to LP-Gas in a very short time.

J.T.S.

Pennsylvania.

Servel, Inc., publishes very comprehensive installation and service manuals and I am sure you will have their full cooperation if you will address your inquiry to that firm at Evansville, Ind.—Ed.

•

Will you be kind enough to advise me the name and address of the manufacturer of "Atlas" Gas Dish Washers?

J.E.C.

California.

The Atlas Company, 1323 Channing St., Los Angeles 21, is the manufacturer of the "Atlas Gas Dish Washer." The man to write is M. D. Silverstone.

This Atlas dish washer is not equipped with an automatic control but has a manually controlled pilot. You may also be interested to know that the same firm manufactures a steam table but this is not ready to be marketed into the liquefied petroleum gas industry yet because of a lack of automatic shut-offs which Mr. Silverstone says are necessary upon the steam table.—Ed.

•

Gentlemen:

I just got through reading "Comments" in one of the issues of the News on ever lasting caution and insistence on safety orders. Just this morning I had to cut an extra 10' of 3" gas main containing a vapor of 1.85 specific gravity from a main that I had killed two days before and got to thinking what would happen.

So not knowing just what would happen I put my torch back in the truck and picked up a hack saw. I had cut natural gas mains after blowing them down and only got a slight puff at the open end. But knowing that natural gas will rise out of pipes and also experienced in watching other men cut them, I knew what to expect. I've been with this firm 6 years and have welded lots of services on the mains without an accident. But when it come to cutting one that had been blown down and not purged I just wasn't sure of the outcome. If you could give me some ideas on the subject I would certainly appreciate it.

F. C.

New Mexico

Normally, cutting into a hot line would give the same effect as cutting into a hot natural gas line.

But it isn't the normal thing that causes trouble. Butane and propane gases are by nature close to gasoline in their actions and it is always possible that a line will have some liquid drips in it. If such is the case, you would have the same effect as cutting into a gasoline line, which just isn't done by anybody wise to oil country welding.

Also, a B-P Gas line that has been disconnected at one end and left over night, or even several days, can breathe in air and as the gas is heavy and will not vent out by gravity, you can get a good explosive mixture that will really make a bang.—Ed.

•

Gentlemen:

We are now selling propane aboveground systems and are having some difficulties. The systems work fine as long as the weather is warm and dry, but when it's cold or damp, moisture forms in the pigtail at the regulator and causes the regulator to stick, or closes the orifice opening to the regu lator with ice.

The tanks have had water in them and some still have some left from the hydrostatic test, but it seems to make no difference if they are completely dry or not, we have had the same trouble. We thought perhaps a dehydrator in the pigtail or a larger pigtail might remedy the trouble. We also were told that by putting alcohol in the tank it would eliminate the trouble but theoretically it does not make sense; however, its sometimes the screwy way that gets the job done.

As for a dehydrator it would take an exceptionally large one to be of

any value, and a pretty expensive remedy, if it had to be changed ever 30 days.

The regulators are large enough to handle the load put on the systems and the tanks are also large enough so we can't seem to place the trouble in the right spot and are asking your help in solving this problem.

E. W.

Kansas

The evaporating temperature of propane is considerably lower than butane. This results in operation of the system at temperatures below the freezing point of water and so-called hydrates.

All propane tanks should be completely dried before they are put into use. The companies who have distributed propane in cylinders for many years go to the extreme in keeping moisture out of their cylinders as they have gone through the same troubles as you are now going through.

For the installations that are already in use, you may be able to reduce your trouble by adding some alcohol to your fuel, as the alcohol tends to reduce the freezing point of water.

If you are having trouble with tanks that you are positive were dry when installed, it is an indication that your propane contains moisture.

It is difficult to remove all the water in suspension from propane. If the temperature at the refinery is high, it will have more water in suspension than if it is cold.

Another method that helps eliminate this trouble is to set the regulator so any condensate that may form in the pigtail will drain back into the tank and not drip into the regulator.

If you revert to the use of alcohol, use either wood alcohol or grain alcohol that has a denaturant that is not corrosive. It should be obtained from a chemical supply company as some drug store alcohol will corrode brass and copper.—Ed.

•

Gentlemen:

We have just begun installing bottled gas and would like to know where mats for radio advertising and 30-second or 1-minute spot radio announcements might be procured.

R.E.L.

Pennsylvania.

If you will write to Budd Mulloy in care of the Lawrence H. Selz Organization, 221 North LaSalle St., Chicago 1, and tell him of your need for advertising suggestions and mats, I think you will get the cooperation you need.

The Selz Organization represents the Liquefied Petroleum Gas Association in the capacity of national publicity agents and has a good deal of advertising material that will be helpful to dealers.—Ed.

•

Gentlemen:

Will you kindly give me some information where I can obtain a new or used gas-fired steam boiler which is sufficient to supply for a 3'x3'x3' retort (pressure cooker) for canning purposes, and blower gas heater which is to be hung on ceiling for heating store in winter time.

Q.H.

New York.

I can give you the name of the James E. Neighbor Co., 4926 East 12th St., Oakland 1, Calif. This firm makes boilers which will meet your specifications.

Suspended type gas heaters with blowers are manufactured by the Reznor Manufacturing Co., Mercer, Pa.—Ed.

•

Gentlemen:

Will you please tell us where we can obtain a practical bookkeeping system for retail LP-Gas business consisting of butane and propane bulk tanks, 400 rental cylinders and tank truck service.

R.J.S.

Kansas.

I can give you the name of Remington-Rand, Inc., 315 Fourth Ave., New York 16.

This firm has been selling bookkeeping systems specially designed for the liquefied petroleum gas industry. If you will tell them of your exact needs, they quite likely will be able to supply them.—Ed.

•

• **BUTANE-PROPANE** *News* **welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed.—Editor.**

# THE *Top Griddle* IS BACK

When WEDGEWOOD originally introduced the Top Griddle it met with instant acclaim and enthusiasm from housewives everywhere. Then came the war. The resources of the James Graham Mfg. Co. were engaged in Government work. We had to discontinue this popular model. But here it is again, better than ever, available to WEDGEWOOD dealers.

MODERNS PREFER GAS

## WEDGEWOOD LEADER IN THE WEST

JAMES GRAHAM MFG. CO.

LOS ANGELES • GENERAL OFFICES & FACTORY, NEWARK, CALIF. • SAN FRANCISCO

# COMMENT

We take issue with those who would discourage the winter heating load because it has thrown the annual balance out of kelter. The heating load is O. K. It is profitable. It serves a real need of consumers.

Don't discourage winter heating. Sell more of it. But **balance** that heating load with more summer applications so that your demand upon suppliers evens out over the year.

There's plenty of B-P Gas to be had. But there's not storage enough to supply out-of-balance demand for the four winter months.

Insist that your customers accept larger containers if they use gas for heating. Fill these vessels in late summer or early fall. Add to your own bulk storage. And best of all, build up new outlets in the summer. If you have an even demand, summer and winter, you'll get gas.

This is the answer to the supply question.

But, in fairness, there are exceptions.

There is a dealer in a certain Arizona winter resort who has no way to balance his winter heating load. There is no summer load to be had. There is no agriculture roundabout because there is no water for irrigation. And the winter visitors go East or West when the heat comes.

This dealer has 15,000 gallons storage, but it is insufficient, and the supplier refuses to give him the quantities he needs during the cold months because his use ratio is so badly out of balance.

The heating load in this case is the dealer's undoing—especially because his rate schedule encourages the user to burn more fuel. And the easiest way to do this is to heat his house.

But for the OPA, this dealer should reverse his rates, inflicting a penalty on all who burn more gas than needed for cooking, water heating and refrigeration.

**Fire losses in the United States were greater for the first six months of 1946 than total annual losses in eight full years out of the last 14, says the National Board of Fire Underwriters.**

**Every minute, day and night, a new fire breaks out. Every hour a life is lost.**

**NEARLY EVERY FIRE IS PREVENTABLE!**

**No industry is striving harder than ours to prevent fires—yet, we can do still better.**

**Fire Prevention Week is Oct. 6-12—but make SAFETY your byword all the year.**

When are these "scarcities" going to cease? This is a good one: The Natural Gasoline Association has named next April for its annual convention in Dallas.

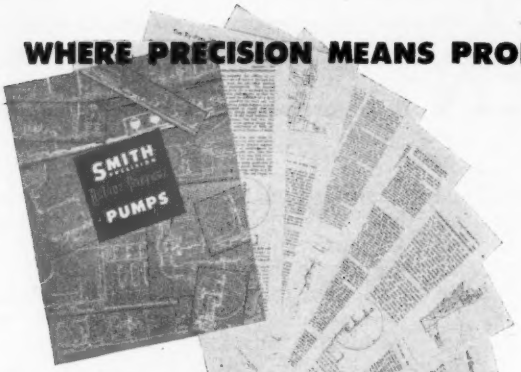
And those who expect to attend are urged to make reservations now if they really want to get a room. A preference will be given those "doubling up."

That's almost as bad as trying to get a gas regulator.

This month R. Stanley Smith resumes his series of valuable articles on "Pump Problems." Probably nothing in our industry has caused as much trouble as transfer of liquid. Quite often it is because of faulty pump installation. Mr. Smith tells how.

By Ed.

# WHERE PRECISION MEANS PROFIT

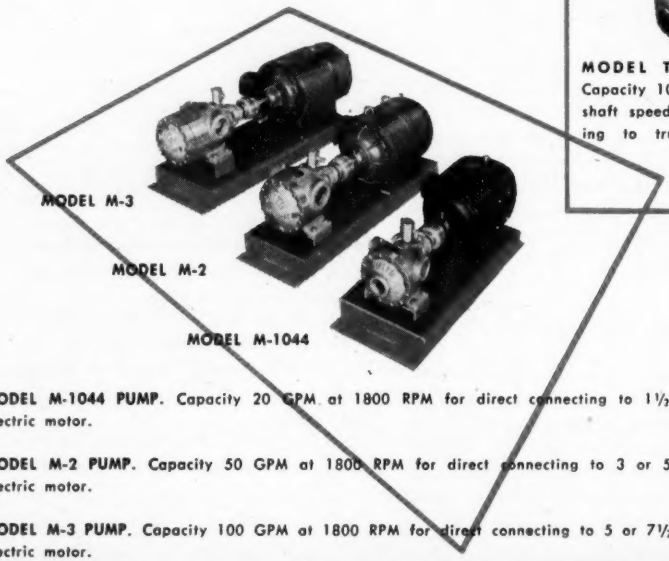



Smith Precision Pumps are designed specifically for pumping L-P Gas, and are built to highest precision standards. They increase pumping efficiency and operating profits. Our new Catalog and Installation Diagrams tell how . . . send for your free copy of Catalog K-646 today.

**MODEL T-1044 TRUCK PUMP** Capacity 20 GPM at 500 RPM shaft speed, for direct connecting to truck power take-off.

**MODEL T-2 TRUCK PUMP** Capacity 50 GPM at 500 RPM shaft speed, for direct connecting to truck power take-off.

**MODEL T-3 TRUCK PUMP** Capacity 100 GPM at 500 RPM shaft speed, for direct connecting to truck power take-off.




**MODEL M-1044 PUMP.** Capacity 20 GPM at 1800 RPM for direct connecting to 1½ HP explosion-proof electric motor.

**MODEL M-2 PUMP.** Capacity 50 GPM at 1800 RPM for direct connecting to 3 or 5 HP explosion-proof electric motor.

**MODEL M-3 PUMP.** Capacity 100 GPM at 1800 RPM for direct connecting to 5 or 7½ HP explosion-proof electric motor.

**SMITH**
**PRECISION PRODUCTS COMPANY**

1135 MISSION STREET • SOUTH PASADENA, CALIFORNIA

# Beyond the Mains

By ELLIOTT TAYLOR

## Insurance Rates Up

It may come as a surprise to some LP-Gas operators to realize that the recent increases in liability insurance rates came about as the result of appeals from some members of the gas industry, itself, rather than at the insistence of the insurance companies.

The reasoning advanced was that if rates were made more attractive, additional insurance companies would start writing this type of business, giving operators a wider choice than now exists. Since at present only a few companies offer products liability coverage in the butane and propane field this may be sound, but in our opinion the industry has been under-insured more because many small operators felt that the premiums were already prohibitive rather than because of an inadequate number of insurance companies willing to take their business.

In the main, the insurance industry hasn't had enough dealings with the LP-Gas business, or over a long enough period, to know exactly what the rates should be. But at least one of the principal companies writing this type of business resisted the increase on the grounds that the old rates were high enough. The insurance company felt that it needed more experience with this type of risk, and that experience can only be had by writing a great many more policies and studying the results.

If the new rates tend to increase the total amount of insurance carried by the industry, the statistics needed to finally set equitable rates may be that much more rapidly gathered. But if the net result is to cut down the number of policies, they will prove of little benefit to either the insurance companies or the LP-Gas industry.

Apparently the new schedules will have to stand for some time, or at least until the National Bureau of Casualty and Surety Underwriters has had time to study the new experience developed and adjust the rates accordingly.

This is an instance in which a united industry front should

have been developed through consultation and cooperation by both national associations before going to the National Bureau's Underwriting Committee. For the representative of one group to plunk for higher rates, while the other officially protests them is an example of small-time rivalry at its worst, yet that is what has actually happened.

We trust that the new rates will not deter operators from taking out the products liability coverage that they actually need. And it is to be hoped that the safety record of the industry will be such as to early demonstrate to the insurance companies that this business can be written profitably at lower rates. And we certainly hope the next time anyone turns up as a liquefied gas industry spokesman in insurance affairs that his recommendations will represent the consensus of the best judgment of all the industry for which he presumes to speak.

## Self-Interest Not Safety

The happy hunch that safety regulations may be so written and manipulated that their enforcement can be used to competitive advantage by a manufacturer or a group of manufacturers is not an exclusive brainstorm of the builders of butane and propane equipment.

It is only natural that any new safety rules are viewed by the equipment man with a judicious speculation in which self-interest has a prominent part. The work of safety committees in the industry has often been hampered by the necessity for treading lightly around a problem lest someone's patented gadget should either be eliminated or made mandatory.

For this reason, while manufacturers often do have the best technicians in their employ, it is considered advisable for the final rules of safe practices to be passed upon and enforced by an impartial and detached authority which, theoretically, at least, has no personal or monetary interest in the equipment to be permitted or rejected.

Thus the National Board of Fire Underwriters will have the final say on the provisions of Pamphlet 58, despite the fact that the proposed revisions of Pamphlet 58, have occupied the time and attention of the best technical talent in the industry for the last four years.

The reason for this, and the reason for the very existence of Pamphlet 58, is that the fire underwriters have an interest in the elimination of fire hazards that is entirely detached from the profit or the loss motive of any manufacturer of equipment, or of any dealer or distributor of LP-Gas.

Similarly, the Interstate Commerce Commission, and the various state safety or industrial accident commissions, are all charged with a responsibility that is primarily in the public

welfare. That they should exercise restraint and judgment in formulating their rules is an obvious obligation that we believe that all view with great concern. As far as the ICC is concerned, it would be nothing short of suicidal for that body to allow itself to promulgate safety regulations that discriminate against the manufacturers of any particular commodity, or the manufacturers located in any particular area unless the public safety which they are pledged to protect should demand such regulations.

It is for this reason that we view with misgivings the petition of a group of tank manufacturers and others who would revise the new liquefied petroleum gas safety orders of the California Division of Industrial Safety. The proposed revisions are so worded that they would eliminate the use of ICC cylinders from use in the state.

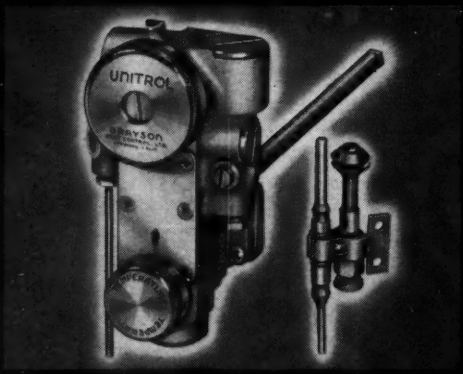
The petition states that the order "discriminates against California organized labor and California manufacturers building LPG containers of the same capacity and end use as ICC containers, since higher stresses are allowed in the design of ICC cylinders than allowed by the API—ASME Code . . . allows out-of-state tanks to be brought into California under ICC regulations which are made out of 17.9% lighter material than the same tank used in the same service and manufactured by California manufacturers and California labor . . ."

Without going into the merits of the weights prescribed by the ICC regulations, it is obvious on the face of it that the ICC cylinder has proven itself over a period of many years of service. Its safety is now unquestioned by either the ICC, the NBFU or any other state safety or accident commission of which we have any knowledge.

The development of a lighter cylinder, in which the dead weight is approximately equal to the weight of the gas contained has been of great economic advantage to the industry. The use of these cylinders is widespread over all of the states, and even in California many operators have thousands of ICC cylinders in service. To summarily ban them would be to set up a state line barrier to the free interstate movement of LP-Gas, at the same time work a senseless and unjustified hardship on the companies which have such containers in every day use.

If the ruling of the Division of Industrial Safety of the state of California is indeed discriminatory against California manufacturers, then the obvious remedy is to eliminate that discrimination, not by barring cylinders that are approved in every other state, but by amending the laws so that California manufacturers, if they are so minded and able, may make and sell cylinders of the same weight and specifications as those now endorsed by the Interstate Commerce Commission.

NEW GRAYSON UNITROL "A"




*advanced features...* 2

Valve can be replaced without removing thermal element from the tank.

GRAYSON
HEAT CONTROL, LTD.
LYNWOOD CALIFORNIA

# Processing Alfalfa With Butane

By R. F. FOSTER
Manager, Stargas Department,
Lone Star Gas Co., Dallas, Texas

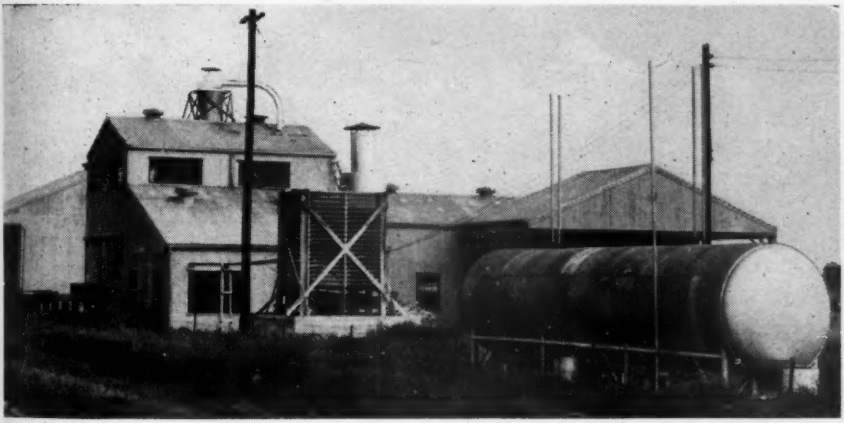
JOE RESTINO and John Nigliozzo, both of Bryan, Texas, are operators of neighboring alfalfa dehydrating plants which are attracting the attention of butane industry people.

R. F. FOSTER

The plants, independently owned, but both located seven miles from Hearne, Texas, use a total of approximately 7,000 gallons of butane during the drying season. The plants, operated by the Brazos Valley Dehydrating Co. and the Plantation Dehydrating Co., are in the heart of one of the best alfalfa areas in the world and are supplied by Lone Star Gas Co. with butane gas service called Star-gas.

This butane is delivered by a large transport from the company's Grapeland plant 100 miles away. The truck has a 3,500-gallon capacity, makes two trips daily to supply the two dehydration plants. Smaller trucks are put into service when required. The butane is stored in a 10,000 gallon tank at each plant.

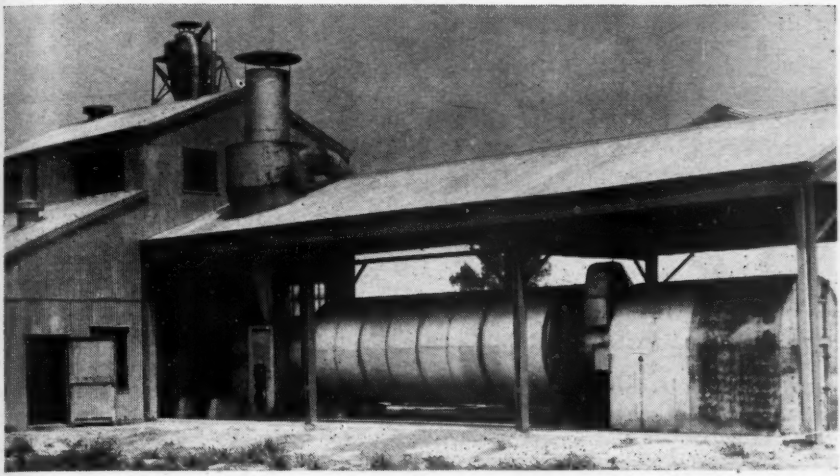
Each plant has a dehydrating oven six feet in diameter and eight



**Brazos Valley Dehydrating Co. plant ships as high as two carloads of dehydrated alfalfa meal a week, averaging 60 tons a car in season. Seasons run from February through July and from October through November. At right is butane tank serviced by Lone Star Gas Co.**

# HAY DRYERS ARE LOAD BUILDERS

**Freshly cut alfalfa, just gathered from the field, is fed into dryer at Plantation Dehydration plant.**



**View of butane furnace, right, and cylindrical drying drum, center, at the Plantation Dehydration Co. near Hearne, Texas. The dehydrating oven is 6 ft. in diameter and 8 ft. long. It uses vaporized butane gas at the rate of 12,000,000 Btu's per hour.**

feet long which requires vaporized butane gas at the rate of about 12,000,000 Btu per hour and a 350 HP butane engine which requires 3,000,000 Btu per hour.

The butane is changed from its liquid state to a gaseous state by vaporizers which are automatically controlled by the pressure in the large storage tank. Regardless of the weather conditions, heat is used to maintain proper pressure so that vaporization continues as rapidly as the butane vapor is used.

Mechanical dehydration of alfalfa, rye grass, and other grains has tremendous possibilities for the Brazos farmers. Climate affords almost year round crop production in this area.

The farmer gains by use of the plants because labor costs in handling crops are reduced, yield per acre is increased by utilizing all cutting, harvesting is distributed over a longer period, and continuous growth is allowed since irrigation can be started immediately after a crop is gathered. A gas-fired dehydration plant can take care of between 800 and 1,000 acres of alfalfa during the year.

Owners of the plants have taken advantage of two valuable factors. They are close to the crop they will help to harvest and process for market, and they have a versatile, dependable fuel supply. Although comparatively new, both plants are already making plans to branch out and include the dehydration of chicory.

The crops sold to these plants can be cut and processed in the same day, which eliminates danger of crop loss through heavy rains and

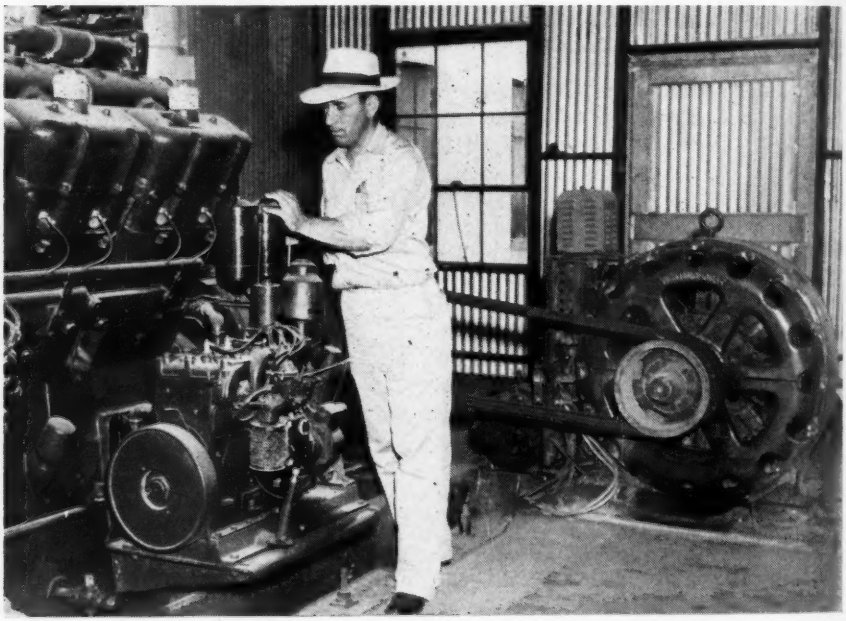
fermentation and bleaching through excessive exposure, and consequent loss of valuable vitamin and food content. It is estimated that the gas-fired dehydration plant allows retention of 95.5% carotene content of alfalfa as compared to only 26.5% carotene content by slow sun-curing.

### Process Explained

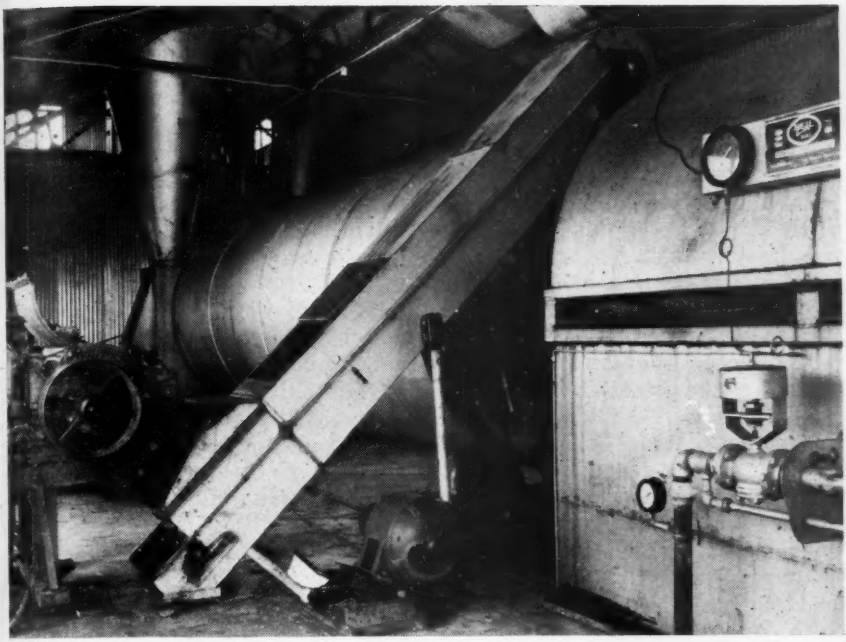
The green alfalfa as it comes in from the field is unloaded onto conveyers which evenly feed the freshly cut alfalfa to the cutter where the green stalks and leaves are cut into two-inch lengths. From the cutter the hay is conveyed up into a receiving hopper where a rotary feeding valve equipped with flexible blades, breaks it up into smaller pieces as it is dropped into the revolving drums of the dryer.

A 40-inch fan installed in the outer end of the revolving cylindrical drying drum pulls the hot gases from the butane furnace and the chopped green alfalfa through the entire length of the drum. In this drum temperatures reduce from 1,800 to 2,000 degrees F. at the inlet, to about 250 degrees F. at the outlet.

The hay, however, as it goes through the drying process, is pro-



**Power plant at Brazos Valley Dehydrating Co. is operated by 350 hp. butane engine which requires 3,000,000 Btu's per hour. Same type engine is used in other valley dehydrating plants.**



**Closeup of butane furnace, drying drum and intake chute at Brazos Valley Dehydrating Co. plant.**

tected from burning because of the rapid evaporation of its moisture content and remains at much lower temperatures than the stream of hot gases being pulled through the drum.

This low product temperature, which is in contrast to the high air temperature in the dryer, accounts for the retention of high carotene content.

The dryer is eight feet in diameter and 35 feet long and the three concentric cylinders graduate down to the smallest which first receives the hay and hot gases. This drum has the more intense heat and the triple cylinder arrangement affords use of radiated heat through the drying process.

After passing through the small drum, the hay is conducted in the opposite direction through the space between the middle size and large cylinder. Revolving of the drum causes the chopped hay to continuously drop from baffle plates along the cylinder and the motion of the hot air carries the product through the successive cylinders. The lighter and drier the hay the faster it moves.

The product is pulverized in the hammer mill after the heaviest stems and foreign matter are removed in a separator; then it goes

into a second separator to be sifted and sacked in 100 pound lots.

The alfalfa leaves are dried and drawn through the heating drum in 20 or 30 seconds and the stems and coarser products take from three to five minutes.

The finely pulverized leaves are much higher in carotene base than are the larger stems, and make a fine, high grade meal which brings the best price on the market. The meal is sacked according to grades.

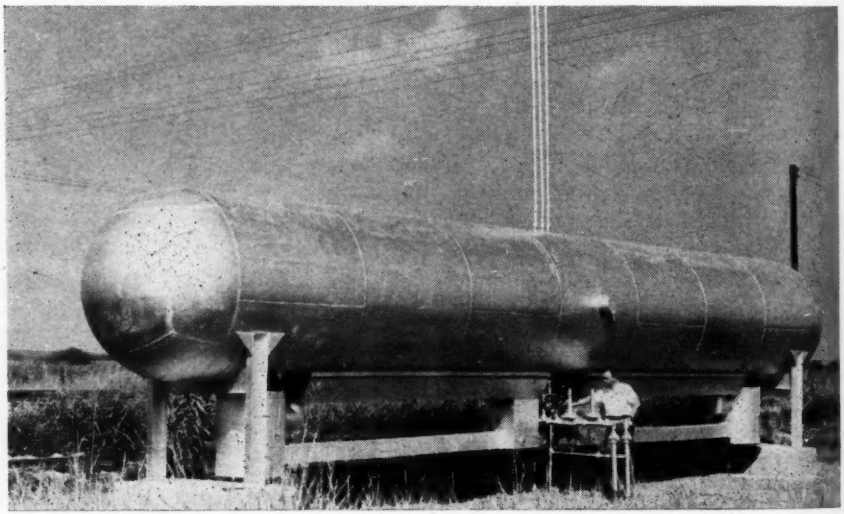
The richer the land, the more tender are the plants and the greater the protein and vitamin content per pound. Actual value of the crop, however, depends primarily upon the stage at which the crop has been cut. From the stem mill where a coarser meal is made, the vitamin content runs around nine to 13%, while choice alfalfa leaf meal averages around 20%.

In the seasons, which run from February through July, and from October through November, the plants run 24 hours a day and process around 25 tons of dehydrated meal a day. One plant ships two carloads of meal a week, averaging 60 tons a car.

Through the off seasons, plants operate on cereal grasses so that, in the Texas area where climate is mild and year around operation possible, the plants need experience no shut-down except when rain may prevent cutting.

Cereal grasses in this area include Sudan grass, oats, rye, barley, and wheat from which highly saleable vitamin pills are manufactured.

In addition to a large Texas market, the valley plants ship meal to Eastern Vermont, New York, Pennsylvania, Tennessee, and Iowa.



**Butane tank at Hearne Alfalfa Milling Co. is 11,000 gallon capacity.**

Streamline cog train at Summit House, Pike's Peak, and (right) Glencove Inn

# Vacation Loads Will Help Balance Sales

By CRAIG ESPY

AND how about the vacation load to help balance the dealer's load?

During the war this was a dead issue, but now it is destined to be big business for liquefied petroleum gas is a natural fuel for resorts and summer homes and if the 1946 season is any criterion, as it definitely is, of what's to come there are lots of summer profits for dealers catering to this class of business.

A good illustration was found this summer in the Pike's Peak area of Colorado.

One day while vacationing there we took a picture of Vernon Butler, trucker, as he was loading, at Teason Brothers' Skelgas docks in Colorado Springs, a cylinder of gas to take to the Summit House on Pike's Peak, the highest installa-

(Left) Jesse Ivey demonstrating permanent mounting for cylinder in trailer camp at Manitou. (Center) Appliance salesroom, Teason Brothers. (Right) Chef N. C. Kimpel, Blue Spruce Inn, cooking on LP-Gas range.

tion of its kind in the world. Frankly, we do not know what the Summit House restaurant used for fuel to make coffee and sandwiches before bottled gas came along, but we could not help thinking while talking to the "trucker" of the vast facilities for service that opened up when this fuel came into existence.

Not to be compared of course to year-round service to homes and communities, the resort business nevertheless totals large in volume of sales.

Just to show how high tourist travel was this summer, the number of tourists visiting the state of Colorado as of Aug. 1 this year was 34% above the former peak year of 1941. Highway traffic was 100% higher. Three million people will have visited the state during the season.

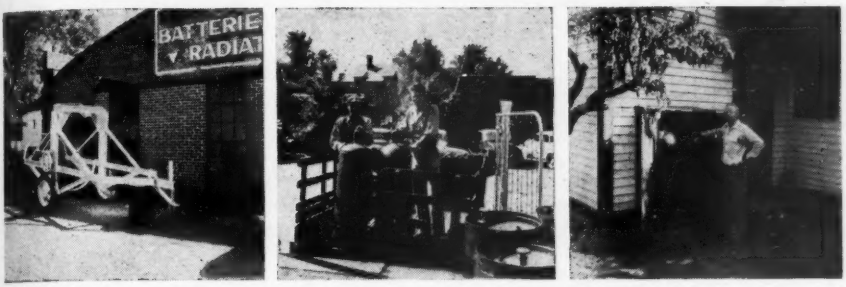
One hundred fifty-one thousand people traveled by highway to Pike's Peak in 1941. This does not include those who traveled to the Peak by cog railway. Figuring that the traffic was considerably heavier this year and that a large percentage of those reaching the 14,116 feet altitude would relish a cup of coffee, and perhaps a sandwich, you get an idea of the potential sales possibilities in just this one installation.

E. S. Teason, of Teason Brothers, named off some of the other important users among the 1000 served by his company in a radius of 50 miles around Colorado Springs.

Emerald Valley Dude Ranch has in service for lodge and camp buildings, one 1000-gallon tank, two 250-gallon tanks and two 150-gallon tanks. A Garland restaurant range, Blodgett oven, a Frialator and automatic hot water heaters operate on the fuel. The ranch is located on the South side of Pike's Peak. The main building was once the guest house and former summer home of the Penrose family. Mr. Penrose, before his death, operated Hotel Broadmoor in Colorado Springs.

Tarry-All Ranch, where the almost extinct Rocky Mountain sheep are provided haven, and the Appelt Ranch, the home of the Antelope, both use LP-Gas. Paradise Valley Guest Lodge, Bruin Inn at Helen Hunt Falls, the Summit House on

**(Left) Paradise Valley guest lodge. (Center) Cylinders for Paradise Valley lodge. (Right) Blue Spruce Inn.**




**(Left) Tank trailer used in hauling propane tanks. (Center) Trucker Vernon Butler on left; T. T. Johnson, Teason brothers, at right. (Right) Owner of the Thompson Inn, Manitou, putting full cylinder into service.**

Mt. Manitou, El Rancho Tejas, El Paso Mines, Inc., of Cripple Creek, are also users.

### Serves Scout Camps, Also

Blue Spruce Inn at Cascade prepares 150 to 200 meals a day over Skelgas fires. The Boy Scout camp at 11 Mile Canyon and the Girl Scout camp at Dickason are also users. The installation at Glencove Inn serves both summer and winter visitors, for this is a popular spot for winter sports and skiing.

Manitou Springs, which will be served with natural gas from the line to Colorado Springs as soon as material for construction is available, provides a good example of the manner in which LP-Gas holds gas load for the gas industry against electric encroachment. The Cliff House hotel in this city cooks with LP-Gas.

Thompson's Inn has equipped 11 apartments for cooking and heating water with the fuel. Patsy's Pop Corn and Candy Kitchen, a gathering point each night for the many vacationers, uses bottled gas under its candy kettles. There are many other installations of LP-Gas in this city.

Nearly every trailer in the trailer camps in Manitou are equipped with LP-Gas cylinders. Mrs. Fred W. Semple, of Iowa, who had been in the trailer camp for three weeks, said she liked bottled gas even better than natural gas and that it will take her at least a week to get accustomed to Iowa natural gas when she returns home again.

### Installing Tanks Rapidly

Mr. Teason says his company is installing all of the large bulk propane plants that the company can secure. On the day of my visit he received delivery on seven 350-gallon tanks, two 1000-gallon and seven 500-gallon tanks.

When these tanks are installed, each one will be handled by means of the trailer shown in the picture. With the trailer one man can load or unload a tank without difficulty or damage, states Mr. Teason.

# Dealer's Obligation to Consumer Is Theme for Colorado Meeting

THE first annual meeting of the Colorado Liquefied Petroleum Gas Association will be held Oct. 13-14 at the Cosmopolitan hotel in Denver.

CLAYTON RAND

Harry Torbit, president of the group since its organization in 1945, will preside at the meeting. According to Mr. Torbit and T. H. Anderson, secretary - treasurer, the theme of the convention will be sales promotion and service because it is believed the industry should devote more effort to presenting a better front to the public and to extending greater courtesy and service to the LP-Gas customer.

Sunday, Oct. 13, will be devoted entirely to the display of equipment and appliances and to registration.

Monday's session will open at 9:30 a.m., with a paper by J. H. DeLoria, advertising manager of the Skelgas Division, Skelly Oil Co., entitled "Sales Promotion of LPG Heating." E. E. Hadlick, executive vice president of the National Butane-Propane Association, will talk on "The Value of State Associations," and Harris A. Goodwin, district sales manager, The Bastian-Blessing Co., Chicago, has chosen the subject of "Your Safety Operations" for the last talk of the morning.

The merchandise exhibits will be open again from 11 o'clock till 12:15. The luncheon speaker will be A. T. (Ted) Carrow, Cribben & Sexton Co., Chicago. He will tell dealers "When Competition Will Start."

The first order of business in the afternoon will be a business meeting to receive a report of the year's activities and the election of new directors for the ensuing term.

The meeting will close with an open forum for all members and operators, with W. F. Kite acting as moderator. Mr. Kite is manager of the Northern New Mexico Gas Co.

The social functions of the meeting will be a banquet in the "Silver Glade" Monday evening, followed by dancing. During dinner an inspirational address will be made by Clayton Rand, nationally known entertainer and humorist, and owner of the Gulfport, Miss., "Dixie Press."

**Denver's Cosmopolitan hotel, where Colorado LPGA holds forth in annual convention Oct. 13-14.**

# Hospitals Among LP-Gas Users In Philippine Islands

WITH the American capture of the Philippine islands from the Japanese, there was reborn, so to speak, many a business that had been destroyed or discontinued because of the war.

Among others which have come back to life is Inter-Island Gas Service, Inc., of Quezon City, a Manila suburb.

This company was first formed and established in 1939 after Andres Borromeo and his uncle, Canuto O. Borromeo, had satisfied themselves that there was a future for a liquefied petroleum gas distribution firm in the islands. The survey from engineering and economic standpoints was made by Andres, a graduate of the Massachusetts Institute of Technology, former chairman of the Board of Mechanical Engineering Examiners and ex-vice chairman of the Petroleum Products Control Administration.

### Company Is Now Incorporated

A partnership was formed and the islanders were introduced to "Rockgas," a product of the Imperial Gas Co., Los Angeles. Since the Philippines gained their independence last July 4, the company incorporated, with Canuto Borromeo as president. He is a graduate of the University of Illinois in mechanical engineering and is manager of the Philippine Engineering Corp.

A recent letter from Andres Borromeo tells of early and current developments:

"In 1939," he writes, "there was a coal and water gas company operating in Manila, so we confined ourselves to selling LP-Gas to cities like Baguio, the famous summer capital of the Philippines, and Cebu City, on one of the islands in the Visayas group. We had as customers, such famous Philippine figures as the late President Manuel L. Quezon and ex-President Sergio Osmena; also, such institutions as the Manila Railroad Co., and the Philippine Army; and we even supplied Rockgas to the Governor of Guam, who was then a captain in the U. S. Navy.

### War Eliminated Business

"During the enemy occupation our warehouse was looted by the Japanese and we completely ceased to do business until Manila was retaken by General Douglas MacArthur, after which we immediately resumed operation.

"The city gas plant above mentioned was destroyed during the fighting, but the people in Manila, and, in fact, all the Philippines, can now avail themselves of a convenient and modern gas service because we can supply them with Rockgas. We have in our staff gas engineers and mechanics with plenty of experience in the past along similar lines."

In the "Republic Inauguration" number of the "Philippines Free Press" appears a full page advertisement of Inter-Island Gas Service. It shows a photograph of a modern kitchen, completely equipped with LP-Gas appliances, enumerates the varieties and quality of services rendered, and names a few of the many prominent users, including some of those mentioned above.

The list is given below to illustrate the type of individuals and institutions benefiting from the use of LP-Gas, and it is of special interest to note that among them are five hospitals:

**Malacañan Palace.**
**Residence: Mrs. Manuel L. Quezon.**
**Residence: Don Andres Soriano and Cottages of Soriano y Cia., PAL, and PIECO.**
**Hospitals: San Lazaro, National Psychopathic, Maternity and Children, Quezon Institute, University of Sto. Tomas.**
**Manila Hotel.**
**Selecta Restaurant.**
**National Textile Mills, NDC.**
**U. S. Quarantine Service: On board M. L. "Perry."**
**Manila Railroad Co.: Inspection car.**
**St. Theresa College.**

## Ohio Propane-Air Plant Will Have Huge Capacity

The Ohio Fuel Co. is constructing two propane-air plants which will have a combined daily capacity equivalent to 65 million cu. ft. of natural gas. According to company officials, these installations will not only be the largest of their kind in the country, but some features of the process will commonly be employed for the first time.

One plant is being built adjacent to the company's McMahon compressor station, about 10 miles southwest of Toledo, while the other is located adjacent to the company's Mt. Sterling compressor station, about 20 miles southwest of Columbus and 45 miles east of Dayton.

After a study of anticipated market requirements for the next five years and the sources of gas to meet these requirements, decision to install the propane-air plants was made.

With the increased demand for both domestic and commercial central heating installations, it has become desirable to have additional sources of gas with a high rate of deliverability which will be used for only a short period each winter.

## Kansas Dealers Will Meet In Wichita on Oct. 21-22

The newest of the state associations, the Kansas Liquefied Petroleum Gas Association, will hold its first annual convention and meeting on October 21-22 in Wichita, according to A. H. Mahnke, executive vice president.

In addition to the regular meeting there will be an exhibit of equipment and appliances by various distributors and manufacturers selling into the liquefied petroleum gas industry.

Similar to other state organizations, the Kansas association has been holding district meetings so that its members will not have to travel so far to central meeting places. Among these were meetings at Chanute, F. N. Havens, chairman, and Salina, George McClelland, chairman.

# PUMP PROBLEMS

## The Use of Hydraulic Power To Replace Electric Motor Drive

By R. STANLEY SMITH
Manager, Smith Precision Products Co., South Pasadena, California

THIS article will briefly cover a new system of power drive for butane and propane pumps.

Hydraulic units, especially designed for this service, have been under development and test by our company for many months past. The results are extremely interesting and give promise of radical design revision both for tank truck mounting, where power transmission from the tractor engine to the trailer has heretofore been difficult, and for replacement of electric motor drive on stationary units. This development is particularly timely for the latter application, in view of the recent difficulties in securing electric motors.

The system consists of the use of a hydraulic motor similar in internal gear principle to that of our regular Smith butane and propane pumps. The motor is approximately 6" in diameter and weighs about 25 lbs., delivering a full 5 horsepower at 1800 RPM. Since the motor operates on hydraulic oil having excellent lubricating properties, it is found there is little or no internal wear in the operation of these balanced gear units.

To supply the hydraulic fluid pressure for a stationary installation, any source of power may be used. For example, an old Ford motor or other small gas engine, which may be fueled with the dealer's own butane or propane gas, may be installed in a remote part of the lot beyond the hazardous zone, and be used to drive a hydraulic pump unit of the right size to supply one or several motor-pump units, running simultaneously if desired.

For tank truck service a particular advantage of this system comes where a pump is to be operated on a tank trailer. Here it is usually very difficult to develop a power connection from the tractor engine. With this new system, the

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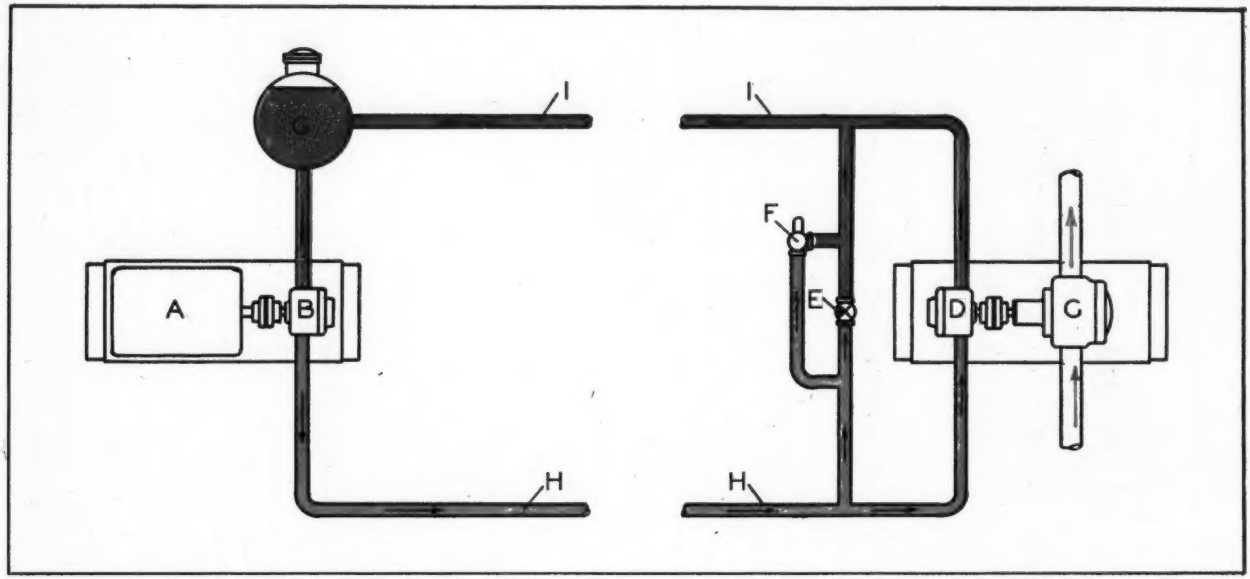
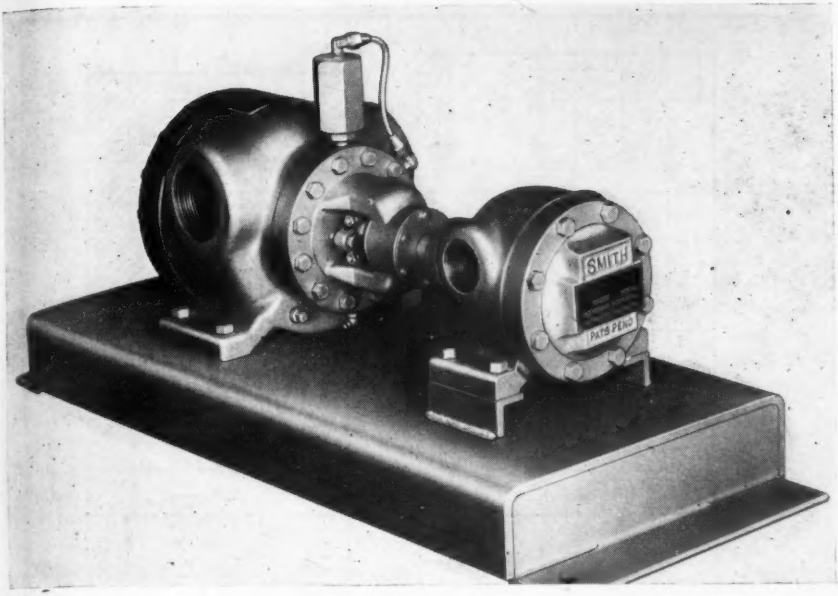
**IN THIS ARTICLE contributed by Mr. R. Stanley Smith, manager of Smith Precision Products Company of South Pasadena, California. Mr. Smith has outlined a new form of pump drive adaptable to B-P Gas service. This form of drive apparently overcomes the difficulty previously experienced in providing a simple and practical means of applying power to a butane-propane pump mounted on a tank trailer. It also affords a means of powering bulk plant pumps other than by explosion-proof electric motors on which deliveries have recently been seriously curtailed.—Editor.**




**The above diagram shows the hydraulic oil piping system used in connection with the new hydraulic motor drive assembly for butane and propane pumps described in this article. Power is supplied by any prime mover as indicated at (A), which may be a small gas or steam power unit or a non-explosion-proof electric motor located out of the hazardous zone. This drives the special hydraulic fluid pump (B). On a tractor and tank trailer unit, pump (B) may be direct connected to the engine power take-off and the hydraulic fluid be conducted to the tank trailer by hose line. The Butane-Propane Pump (C) is driven by the small 5HP hydraulic motor (D). Great latitude in positioning this unit is permissible and many special control advantages may be developed. Other items shown in this diagram are (E) hand throttle valve for speed control; (F) pressure safety relief valve; (G) oil fluid storage tank; (H) high pressure piping; and (I) low pressure piping. In practice, 1¼"piping has been found practical. A 15 gallon oil supply tank is adequate.**




**The above cut shows one form of motor-pump assembly consisting of a small 5 HP hydraulic motor operating at 1800 RPM direct connected to a Smith Model M-2 Butane-Propane pump, capacity 50 G.P.M. This motor substitutes for the 5 HP Explosion-Proof electric motor usually supplied.**

small, light weight hydraulic pump may be mounted so as to be driven in the usual manner by the transmission power take-off.

The high pressure hydraulic oil developed in this pump is then transmitted by pipe line and hose connection between tractor and trailer to any convenient position on the tank trailer. Here a similar small hydraulic motor operates direct connected to the butane or propane pump.

This system greatly reduces any possible fire hazard in either the stationary or the truck installation. These pumps and motor units are small and relatively low in cost. They also perform with quite a few additional advantages over conventional drives, such as that of permitting more variation and control of the operating RPM and torque development.

For example, when filling cylinders where only a small part of the total pump capacity may be required, the hydraulic motor and pump can be throttled down with a single hand control valve at the point of operation to any desired slower speed. Also, when loading or unloading, the speed of the pump may be increased or decreased at will to the point of most effective delivery.

LEVELING THE LP GAS LOAD
CHART NO. 1
PRODUCERS' SALES OF BUTANE TO LP GAS INDUSTRY
= PRESENT SALES CURVE
= IMPROVED SALES CURVE AFTER "LEVELING THE LOAD"
Percent Of Year's Total
16
14
12
10
8
6
4
Jan.
Feb.
March
April
May
June
July
August
Sept.
Oct.
Nov.
Dec.
CHART NO. 2
STOCK OF FUEL ON HAND
CAR DELIVERED
DELIVERIES TO CUSTOMERS.
Gallons Of LP Gas
30,000
25,000
20,000
15,000
10,000
5,000

# Leveling the Load

THE charts on the opposite page and the following discussion entitled, "Leveling the Load," give dealers a time picture of existing conditions as they apply to demand and supply of fuel and vividly emphasize many points that have been brought out in Butane-Propane News this year in articles on load balancing.

These first appeared in "Who and What," published by The Bastian-Blessing Co., Chicago, and are used by special permission.

•

The LP-Gas industry faces a real problem—namely, to eliminate peak demands upon producers. Unless corrective measures are taken, prices cannot remain stable and distributors cannot be properly served.

The solid black line on Chart No. 1 shows that the present ratio between the winter high and the summer low is almost 4 to 1. The distributor can help lower this ratio by increasing the size and number of his bulk storage tanks. With this added capacity, he can order and have transported a full reserve of fuel well in advance of his peak period.

Such a reserve—built up during the "off" period—will have a tendency to balance the demand, as shown by the dotted line on Chart No. 1.

Chart No. 2 shows how the distributor with sufficient storage capacity can spread his demands on the producer on a fairly even level through out the entire year. The bar graph (solid lines) translates the percentage load per month of Chart No. 1 into gallons per month. The dotted line indicates the fuel on hand in the operator's storage tank—assuming that he distributes an average of 120,000 gallons of fuel per year and that his tank has a capacity of 30,000 gallons of water (26,000 gallons of LP-Gas).

Starting with a full storage tank on Nov. 1, the operator takes care of his greater-than-normal loads in the peak months by drawing on his reserve supply. The contents of the storage tank drop to a comparatively low point in the spring; but the slow summer season is used to build up the LP-Gas reserve again until, by Nov. 1, the tank is full and the cycle is repeated.

Note that the storage tank supply is replenished by a tank car (10,000 gallons) of LP-Gas at approximately monthly intervals. During the latter part of the peak season, a tank car is required every 25 to 27 days; during the slack season the interval is occasionally 36 to 38 days.

These slight deviations from the ideal one-a-month car delivery result in a curve (dotted line on Chart No. 1) which has only comparatively small peaks and valleys during the first six months, and coincides with the norm during the last six months.

These general principles apply regardless of total annual sales. The information available indicates that, so long as a distributor's sales follow in general the curve marked "Deliveries to Customers" (Chart No. 2), that distributor requires storage facilities approximately three times his average monthly sales volume.

For example: If the distributor's deliveries average, over a year, 30,000 gallons per month and his sales

follow the general trend indicated in the curve marked "Deliveries to Customers" (Chart No. 2), he should have storage for approximately 90,000 gallons.

Now, how about the extra cost of increased storage capacity? It is negligible—especially compared to the injury that would result to an operator's business if he could not obtain fuel at a peak period. For instance, assuming, as above, that an operator distributes an average per year of 10 000 gallons of fuel per month, and that the life of a storage container is 20 years, the estimated costs would work out as follows:

30,000 gallon storage plant costs $7,000
18,000 gallon storage plant costs $4,500
10,000 gallon storage plant costs $3,000

Amortizing the cost of the containers, the cost to the operator handling 10,000 gallons per month in an 18,000 gallon container is only $.0006 more per gallon than it would be if he were using a 10,000 gallon container. Likewise, it would cost the operator handling 10,000 gallons per month in a 30,000 gallon container only $.0017 more per gallon than if he were using a 10,000 gallon container.

## New Minnesota Firm Opens Duluth Office

The Butane-Propane Gas Equipment Co. has established headquarters in the Alworth Bldg., Duluth, Minn.

This concern is offering a complete service to dealers and distributors of LP-Gas in Minnesota, North Dakota, South Dakota and Wisconsin. It is planned to supply hoses, fittings, valves, regulators, tanks, pumps, etc., for both gas bulk plant operations and motor fuel installations.

This new firm is headed by L. G. Steinmetz, formerly Chicago branch manager of American Liquid Gas Corp. and will specialize in Algas carburetion equipment for farm tractors, trucks, and power units. Also, A'gas vaporators for vaporizing large quantities of fuel.

## North Eastern Section, LPGA, Meets in Atlantic City, Oct. 10

According to the latest word received from Howard D. White, executive vice president of the Liquefied Petroleum Gas Association, plans are now complete for the one - day convention of the North Eastern Section of the LPGA. The meeting will be held in Atlantic City on Thursday, Oct. 10. R. E. Forsberg, chairman, will preside.

R. E. FORSBERG

This meeting has been specifically timed to be held during the week of the American Gas Association convention and the Gas Appliance Manufacturers Association exhibition to be held in Atlantic City on Oct. 7.

The program is scheduled to be brief but subjects of special importance will come before the meeting.

Those who expect to attend should make their reservations as early as possible with the Hotel President. It is expected there will be a large attendance as 400 requests for tickets to attend the GAMA exhibition have already been made to the LPGA. These tickets will be mailed to LPGA members as rapidly as requests come in.

# Building Up Rails

## And Heating Water Storage Tanks

HAVE you ever travelled on one of those branch line railroads on which the cars jump up and down and vibrate like popping corn when the engineer puts on a burst of speed which exceeds 25 or 30 miles per hour?

The chances are more than even that at one time trains glided over this railroad at a much faster pace, but continual hammering of train wheels over the joints between rails has produced a worn condition of the track not unlike that of a washboard road.

Every depression, as it is hammered into the rail surface, causes the train wheels to bounce and start another depression just beyond it until the entire top of the rail may be a series of small hills and valleys. These may not be discernible to the naked eye, but they are there just the same, and they are the cause of excessive vibration which shakes rolling stock apart.

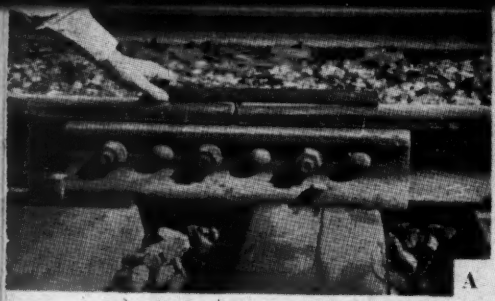
Other than shaking the rolling stock to pieces and producing discomfort, "washboardy" rails are dangerous, particularly when this condition occurs at or near a joint. Let us make some rapid fire calculations as to the abuse which rails have to take because of this.

A modern steel coach may weigh as much as 75 tons, or 150,000 pounds. It is usually supported by at least six axles having 12 wheels, so theoretically each wheel carries a load of 1/12th of 150,000 pounds, or 12,500 pounds. Let us assume that one rail is 1/16th of an inch lower than the adjoining rail at the joint. This would be 1/192nd of a foot. The theoretical hammering force as each wheel strikes the lower rail would be 1/192nd of 12,500 pounds or 65.1 foot-pounds.

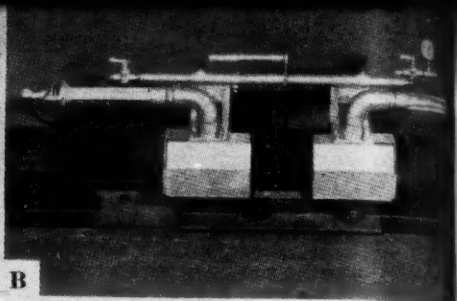
At first thought this does not seem to be much of a blow for a heavy steel rail to absorb, but what it amounts to can be better understood by B-P Gas men if they can comprehend the force which would result from dropping a loaded propane cylinder weighing 200 pounds onto a solid surface through a distance of approximately 4 inches. A cylinder might stand this abuse several times, but if it were repeat-

By C. C. TURNER

Special Representative
Butane-Propane News



A



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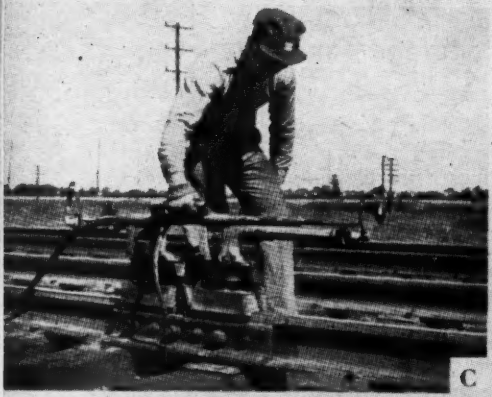

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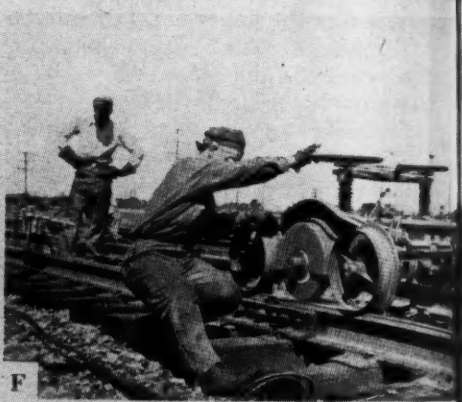
D

E



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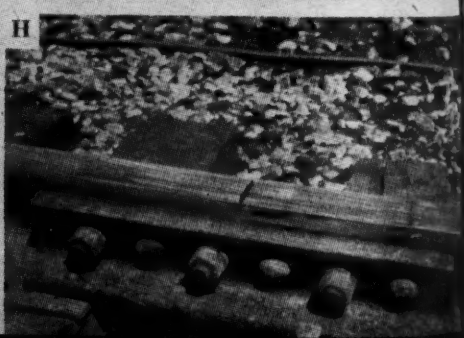
G



H

ed many times with great rapidity the result would be a crystallized cylinder which might rupture at almost any impact.

Let us forget about the 150 ton monster that may be pulling the train, and then imagine a modern 15 car passenger train tearing over our uneven rail joint at 60 miles per hour. The total length of the train would be approximately 900 feet, so it will pass over our uneven rail joint in 900/5280ths of a minute or a fraction over 10.2 seconds.

During that short time 3 x 2 x 15=90 wheels will strike the lower rail 90 hammer blows of 65.1 foot-pounds intensity. This is at an approximate rate of 530 blows per minute. Actually the blows are struck in phases of 3 at much greater rapidity, each phase lasting but 0.10227 of a second. This rythmic but intermittent hammering is at the rate of 1758 times per minute.

Imagine hammering that 200 pound propane cylinder up and down on a hard object through a 4-inch distance and at the speed at which an average electric motor rotates, and you will have some idea of the punishment which rails can receive due to uneven rail joints or a "washboardy" condition. It explains why rails break most frequently under sub-zero temperature conditions when the steel in them is most brittle, and why most rail breaks occur near the rail joints.

### Engineer's Sagacity

You can also appreciate why the engineer causes his train to crawl over a rough stretch of track. It isn't his concern for your comfort or the upkeep of his company's rolling stock but it is his fear of starting a sudden trip into eternity due to a broken rail.

There was a time when the railroads combatted this wear and tear upon the rails by sawing out worn rail joints and inserting shorter pieces of good rails, but in the course of time this increase in the number of rail joints multiplied the cause of their difficulties.

It was then that someone had the bright idea of building up the worn rails by welding and then grinding them down smooth with a special grinding machine. First attempts were not successful, for proper consideration had not been given to the stresses set up within the rail, changing of its temper and tensile strength, plus the fact that the bond between a cold rail and the welding rod was not al-

**A. Rail marked for welding, with straight-edge in position to indicate amount of build-up required to restore joint to smooth riding surface.**

**B. Teleweld propane heater designed to be adjustable for differential heating of rail.**

**C. Propane preheater being placed in position on rail joint. Rail is preheated before welding and post-heated after welding.**

**D. Electric welder in action rebuilding battered rail ends.**

**E. Completed electric weld before grinding.**

**F. Electric powered double action grinder in operation with post-heater in position on next weld before grinding.**

**G. Cross grinder bevelling rail ends after welding and surface grinding is completed.**

**H. Rail ends after completion of electric welding, surface grinding and cross grinding with added protection of heat treatment by Teleweld propane heater.**

**Rail end welding crew, showing sequence of operation.**

ways perfect. Pre-heating and after-heating with acetylene as well as welding with it made the cost of such repairs prohibitive, and finally resulted in experimentation with electric welding.

This is the process which is used today, and the method has been so successful that a great new business has sprung into existence already. Leader in this field is Teleweld, Inc., of Chicago, and this firm, alone, employs 20 units, each unit operated by two crews, in order that work may be continued by each unit for at least 16 hours per day. Each unit, in addition to transporting special welding and grinding equipment in specially designed cars, also has sleeping and eating accommodations in the train for its men. In rush periods three crews are carried so that work may continue throughout 24 hours of each day.

At this point one might well ask wherein B-P Gas operators are concerned in an electric welding process. Well, I'll tell you. The tremendous and instantaneous heat of an electric arc produces a brittle weld plus stresses in a rail which are conducive to fracture and disaster. In order to produce perfect work it has been found necessary to preheat the rails and also after-heat them in order to procure the proper bond, eliminate stresses and restore the original temper of the rails. Oil was tried for this purpose and discarded, and the rail welders have adopted propane with special preheating and after-heating torch equipment.

A crew will cover 1/3rd of a mile of ordinary track in an 8-hour day, and use at least 200 pounds of propane. Standard ICC cylinders are used for this purpose because of their portability. Purchases are made from dependable sources of supply in each geographical dis-

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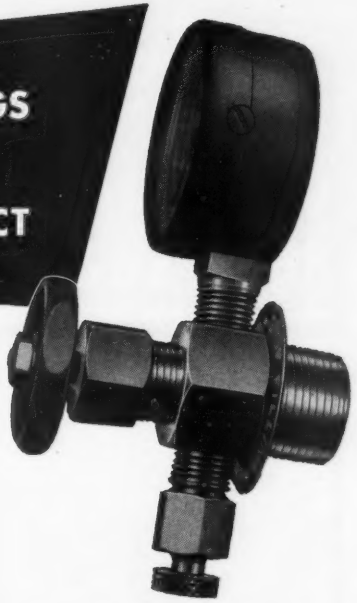

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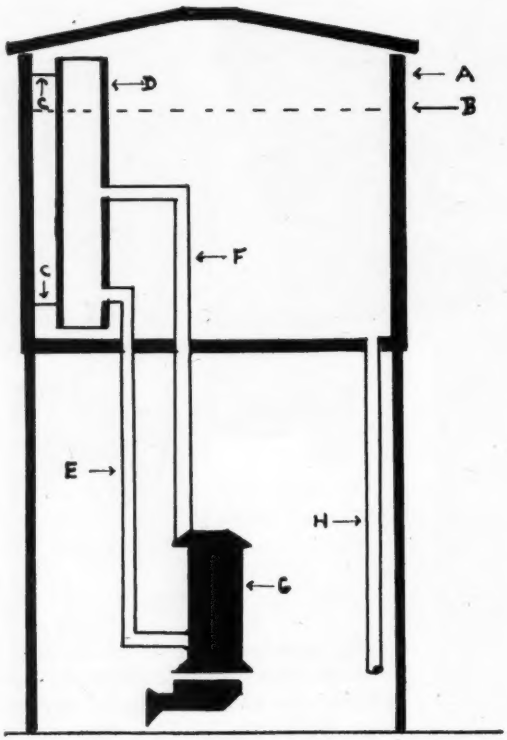


**SCHEMATIC DRAWING A. SHOWING ONE METHOD OF PREVENTING A VACUUM BEING FORMED IN A WATER STORAGE TANK DUE TO ICE FORMING OVER THE WATER SURFACE.**

**Legend. "A" represents the water tank shell, "B" the usual water level, "C" the supports of a large pipe "D" which is open at both ends, "E" and "F" are water supply lines to side arm water heater "G". Warm water rises in pipe "D" and not only keeps ice from forming inside of it but for several inches around it, thereby causing a vent hole through the ice so that a vacuum is not created when water is withdrawn through withdrawal pipe "H". Suggested automatic controls are shown in schematic Drawing "B".**

trict, and the reliability of the supplier is taken into consideration as well as his ability to deliver filled cylinders at designated rail points when and as they are needed.

Bearing in mind that Teleweld, Inc., although it is the largest concern doing this work, is not the only one that is building up rails for American railroads, let us attempt to arrive at some figure as to our present and potential markets for this service.

Teleweld's approximate 20 units, operating 16 hours per day, an average of six days per week, for 45 weeks in the year, would use 2,160,000 pounds of propane annually. Venture a conservative guess that competitive concerns use an equal amount. Here you have 4,320,000 pounds of propane per year, and this business is but in its infancy with the service just being extended beyond the boundaries of the United States into Canada.

As this valuable service to railroads throughout the world is ex-

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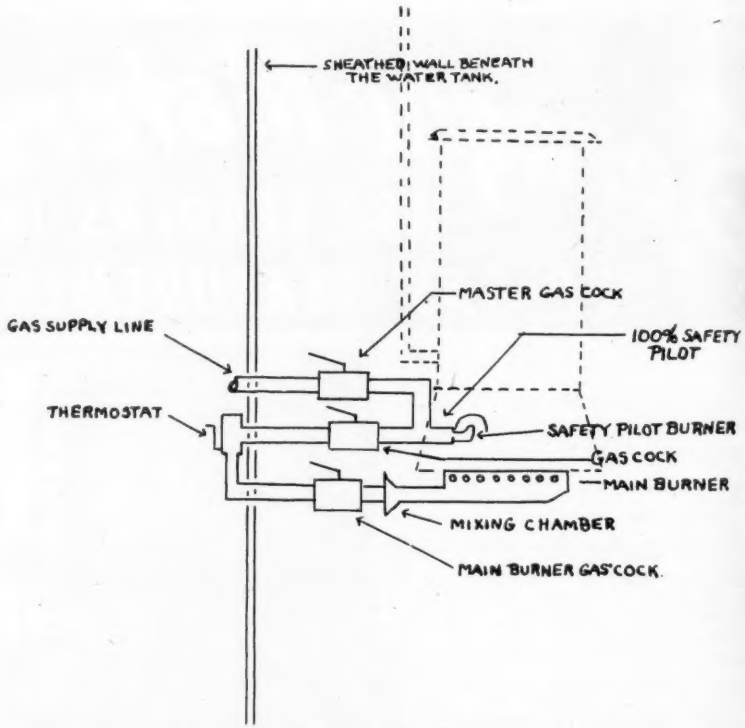



**SCHEMATIC DRAWING B. SHOWING ONE METHOD OF ARRANGING AUTOMATIC CONTROLS FOR THE GAS EQUIPMENT USED IN AN ANTI-VACUUM WATER TANK INSTALLATION SUCH AS IS SHOWN IN SCHEMATIC DRAWING "A".**

**The middle gas cock is not essential, but permits working on the thermostat when the pilot burner is in operation. This gas cock should be entirely open or entirely closed. If this gas cock is installed the bottom gas cock may be eliminated.**

tended, it is conceivable that consumption for this purpose may reach at least 20,000,000 pounds per year, with at least half of this amount used upon the North American continent. It is a field of great possibilities for the B-P Gas business and warrants cooperation of our industry in the way of engineering assistance, better service, and attractive prices so that American railroads can afford to extend the service to every jerk-water line, railroad yard, and side-track.

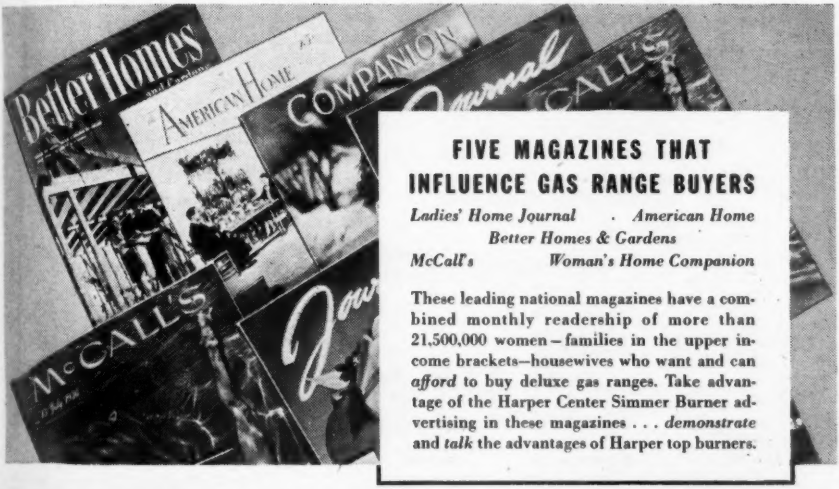
As a suggestion, get in touch with your nearest railroad superin-

*This booklet identifies ranges equipped with the* **HARPER CENTER SIMMER BURNER**

A STOCK QUESTION being asked by more and more women when they set out to buy a new gas range is, "Has it got the Harper Center Simmer Burner?" That's the cue for your salesman to produce the booklet shown here, which is put in every Harper equipped range when it leaves the factory.

Our consumer advertising is telling prospective range buyers to look for this identifying booklet. It also points out that the famous Harper "2 burners in 1" Center Simmer Burner saves up to 39% on gas, keeps kitchens up to 9 degrees cooler, saves hours of kitchen pot-watching weekly, and has many other advantages possessed by no other top-burner.

To trade-up your customers to a higher priced range, *demonstrate* these advantages. We offer you a special FREE booklet, "How to Sell More Gas Ranges," which contains a series of quick, convincing floor demonstrations planned to dramatize the advantages of the modern gas range. Send for copies for your salesmen. Harper-Wyman Company, 8562 Vincennes Avenue, Chicago 20, Ill.

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*"... Holds the Lines for Gas"*

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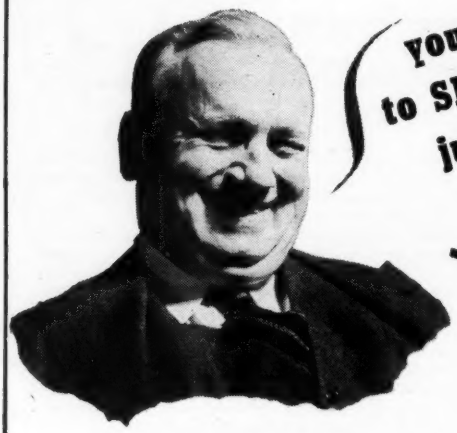

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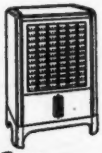
Empire realizes that building fine appliances is insufficient, and that high caliber distribution policies are a requisite if dealers are to profit from the sale of these appliances.

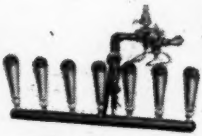
You are invited to consult any of more than 4,000 Empire Franchised Dealers. Their answer will convince you to investigate immediately.

**There is an Empire Representative in your territory.**
**He'll be glad to consult with you.**

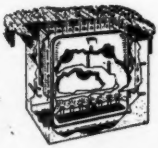
***Empire* Gas Ranges**



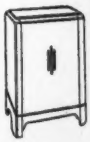
***Empire* Forced Air Heaters**



***Empire's* New Patented Burner**



***Empire* Gas Floor Furnaces**



***Empire* Vented Circulator Heaters**

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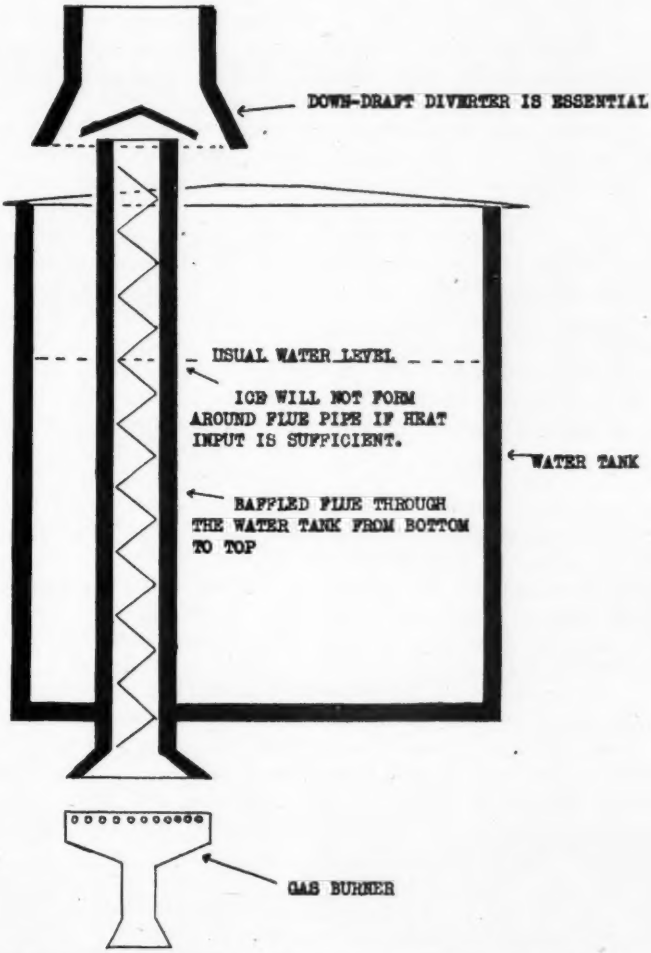

DOWN-DRAFT DIVERTER IS ESSENTIAL
USUAL WATER LEVEL
ICE WILL NOT FORM AROUND FLUE PIPE IF HEAT INPUT IS SUFFICIENT.
WATER TANK
BAFFLED FLUE THROUGH THE WATER TANK FROM BOTTOM TO TOP
GAS BURNER

**SCHEMATIC DRAWING C. SHOWING ANOTHER METHOD OF PREVENTING A VACUUM BEING FORMED IN A WATER TANK DUE TO ICE FORMING OVER THE WATER SURFACE.**

**Hot flue gases are utilized instead of circulating water as in schematic Drawing "A". The controls are the same as shown in schematic drawing "B".**

tendent having to do with maintenance of the right-of-way. Find out if work of this nature is contemplated and who is going to do it, then offer your services to that operator as a supplier of fuel, quoting prices and explaining in detail the delivery service which you can offer as well as its dependability and the sufficiency of your supply.

Before you do this, make sure that you have a reserve stock of at least 200 cylinders with which you can supply immediate service. Rail welding crews move quickly from point to point, and their employers cannot afford to tie up a crew for a minute because of lack of fuel.

•

In a northern New England town, lashed by savage storms from the Atlantic ocean and numbed by bitter cold from out of the northeast, there was a water tower of the conventional type which had given the railroad no end of trouble due to frozen water lines, both beneath the water tank and at the valves beneath the tower from which locomotive tender tanks were filled. In an attempt to remedy the condition the railroad had sheathed in the space beneath the tank and installed an oil heater. This was all right as far as it went, but somebody was always forgetting to fill the oil burner tank, or the burner would become dirty, clog up, and the flame go out, resulting again in frozen water pipes.

Another trouble beset them because of the water within the tank freezing over on the top so that a vacuum was created when water was withdrawn from it, this resulting in shutting off the flow of water to the water tower.

An enterprising B-P Gas dealer went to work upon the railroad's problems. He installed a B-P Gas side-arm, or tank, water heater beneath the sheathed-in water tank as in Schematic Drawing "A". The burned gases were allowed to escape into the sheathed-in portion beneath the water tank. A thermostat put the main tank water heater burner into operation when the temperature dropped below 34°F., and at other times only a pilot burner was left in operation. (See Schematic Drawing "B.")

The railroad did not experience any further trouble with frozen pipe lines beneath the water tank, and the vacuum condition in it due to the surface freezing over was eliminated.

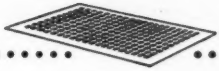
In the valve pit beneath the water tower a common coffee urn burner was installed. This was also thermostatically controlled. Gas consumption during the months from November through April was but 700 pounds of propane, and the gas bill was approximately $75. This was less than what a single freeze-up had cost the railroad in the past.

That railroad is now considering other similar installations for other points upon its system. Because these points are so widely separated the handling of the gas load is distinctly a piece of business for local gas dealers.

•

The application of gas-fired water heaters to water storage tanks is not confined to the rail-

# MORE THAN 350,000 WARDS IN USE



## ...and giving dependable service!

THE WARD FLOOR FURNACE is "built to last a lifetime!" Wards that were installed many years ago are still delivering their full quota of healthful heat—at low operating cost.

This explains the enthusiasm of Ward owners and dealers. It explains why Ward is considered the standard by which floor furnaces are judged, in every area where it is sold.

Every detail of Ward design and construction is *right* because there's a third of a century of floor furnace experience back of every Ward. Ward pioneered many of the advanced features that have made the floor furnace the efficient, economical appliance it is today.

At the present time, the demand for Wards far exceeds our production. However, we hope to be able shortly to increase our delivery quotas and eventually offer additional dealers the sales advantages of Ward Floor Furnaces.

*37 YEARS OF "KNOW-HOW"*

**WARD HEATER COMPANY**

1800 WEST WASHINGTON BOULEVARD • LOS ANGELES 7, CALIFORNIA

roads. Many municipal water plants use elevated water tanks for pressure purposes and are plagued by the same problem of vacuum conditions or frozen inlet and outlet pipe lines. This is also true of many northern industrial plants. A typical schematic installation which utilizes hot flue gases, only, and for instances where the vacuum difficulty alone is experienced, is shown in Schematic Drawing "C."

•

Our experience with railroads in the application of B-P Gases to their problems leads us into many other fields of industrial application if we are awake to the possibilities. In the next chapter will be analyzed a particular railroad application that has proved to be efficient and holds tremendous opportunities for us in building a gas load. It has not acquired acceptance from the railroads because it was never properly presented, but it put its inventor into a profitable gas business with the Great Northern Paper Co.

Running a railroad and manufacturing paper are two businesses in which it is hard to see much in common, yet the example proves how similar are the maintenance and repair problems of all enterprises.

## AGA and GAMA Plan Big Meeting in Atlantic City

The 28th Annual Convention of the American Gas Association at Atlantic City, during the week of October 7, promises to reach new high levels in entertainment and educational value, as well as in attendance, Irving K. Peck, chairman of the convention committee and vice president and general manager of the Manufacturers Light and Heat Co., of Pittsburgh, reports.

The program is being carefully arranged, with every possible consideration being given to effect a proper balance of subjects of wide industry interest so that every member present will benefit through attendance at the convention.

Manufacturer interest in the exhibit of gas appliances and equipment is running high, according to Harold Massey, assistant managing director of the Gas Appliance Manufacturers Association. To date 112 exhibitors have signed up for 63,000 square feet of space which represents 97 per cent of the maximum space taken at any previous exhibit in Atlantic City.

## Ideal Fuel Corp. Incorporates For South Carolina Business

Recently the Ideal Fuel Corp. was granted a charter to sell liquefied petroleum gas and gas appliances in South Carolina, according to Jay Bertrand. The home office is Spartanburg.

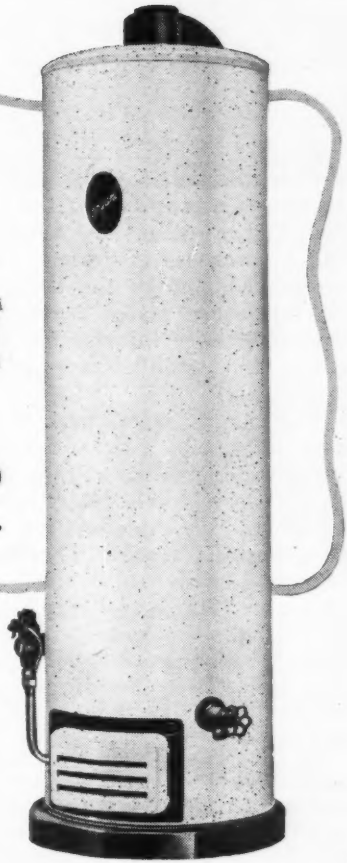
The officers of the company are Jay Bertrand, president and treasurer; O. T. Moffett, vice president, and Simpson Hyatt, secretary.

The company is capitalized for $30,000 and is now open for business. It will have a modern bulk plant in the near future.

The members of the Ideal Fuel Corp. are fully experienced in handling and distributing liquefied petroleum gas and in servicing all appliances, having formerly operated a butane business in Texas.

# A NEW automatic water heater

**TO MEET 1946 BUILDING AND MODERNIZATION BUDGETS . . .**



The new Bryant Model 105 Automatic Storage Water Heater is now in production. This popular-priced unit will set new standards of quality and performance while serving America's homes.

Attractive in its gleaming white finish, the Model 105 is completely automatic, thermostatically-controlled. It is rigidly constructed for long life and dependable operation, super-insulated for heating efficiency. The "Bryalite" Automatic Safety Pilot, a Bryant engineering achievement, provides easy, safe lighting. Segmental baffles inside the heating section utilize *all* the heat by directing it against the heating surface.

These features make the Model 105 Automatic Water Heater highly desired equipment in any new or modernized home.

BRYANT HEATER COMPANY
17825 St. Clair Ave., Cleveland 10, Ohio
*One of the Dresser Industries*

bryant
GAS HEATING
LET THE PUP BE FURNACE MAN

**The most complete line of gas heating equipment in the nation!**

# LPGA Opposes Insurance Rate Increase

A BULLETIN was recently issued by Howard D. White, executive vice president of the Liquefied Petroleum Gas Association which discusses insurance rate increases adopted by the Underwriters for several states in which limited experience information resulted in the establishment of high premiums.

The bulletin shows what is being done to provide a basis for future adjustments and suggests to the industry as a whole what must be done to aid the Underwriters in setting equitable rates. The bulletin is quoted below:

LPGA has completed the filing of protests to increases in insurance rates in Alabama, Florida, Kansas, New Jersey, New York, North Carolina and South Dakota, in which many of our members cooperated.

The increases had already been adopted as a result of appeals from within the industry which stressed only the need of "relief" and failed to consider the wisdom of a background study to determine the cost of such "relief." The increases were, therefore, adopted before concerted action could be effected.

Our protests have laid the ground, however, for careful attention to the experience of the immediate future with a pledge for readjustment upon the basis of factual experience.

We have permission to quote the following from the National Bureau of Casualty and Surety Underwriters:

"It is regrettable that the revised rates promulgated for general liability insurance have created such a disturbance.

"The rates agreed upon by the Underwriting Committee and subsequently promulgated by this Bureau were not based upon past experience, but represented the best underwriting judgments of that Committee. This Bureau has at no time contended that the past experience we had available at the time this problem was under consideration was of sufficient volume to warrant any particular consideration from the rate-making standpoint. The limited volume of experience served merely to indicate the need for higher rates than as justification for these rates.

"The underwriting judgment was influenced by the information available and by the potential catastrophe hazards involved.

"It was understood that as this business is written, and experience gained, the experience developed could be used to determine more precisely the cost for the insurance and the rates adjusted accordingly."

In our opinion, it is unfortunate that the industry was not able to compile and analyze its own experience so that the facts in the case could have been in hand before the matter was presented to the National Bureau. Such a study, over the whole industry, and with a view of determining the differences in experience in specific areas against other areas, would have revealed either the inequity of the present rates or have proven them justified.

Now, the future adjustment of this matter will strictly depend upon the experience of the insuring companies and the outcome is chiefly in the hands of the industry.

We firmly believe that the future will prove these increases exorbitant and that redoubled efforts in the interest of safety will provide the right to expect reasonable reduction. LPGA will watch developments in this connection with the closest possible attention to all details leading to equitable readjustment.

**GAS EQUIPMENT COMPANY, Inc.**

2620 South Ervay « DALLAS, TEXAS

# Announces

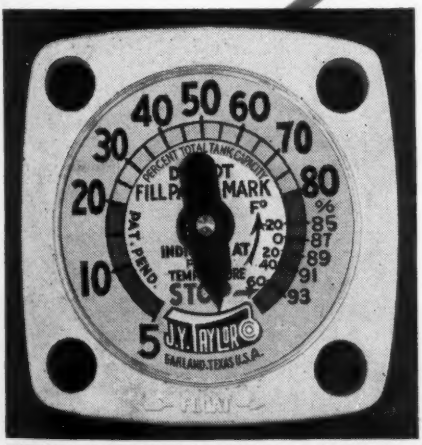
*The Unbreakable*

***—Leak Proof***
***—Mist Proof***

# TAYLOR

## L-P GAS FLOAT GAGE

**The new and improved gage for L-P gas tanks has overcome several drawbacks that have been common to the industry until now . . .**




**UNBREAKABLE Crystal!** It's not glass —it's PLEXIGLAS!

**Magnet Indicator.** Two Double Drive Alnico Magnetos insure positive gage action within SEALED and AIR-TIGHT gage chamber.

**Stainless Steel Pivot Post** with brass bearing pivot . . . non-corrosive . . . permanently accurate.

**Aluminum Tube.** Most rigid type—protecting entire drive shaft.

**One-Piece Construction** of float arm, counter weight and drive gear assures strength and unfailing accuracy.

**Shrouded Tooth Gears.** Shroud protects teeth and insures smooth performance. Die cast for accuracy and strength.

These are some of the high-light features that will make the TAYLOR FLOAT GAGE your first choice from now on. **Write for circular.**

## *Thousands of Dealers know:*

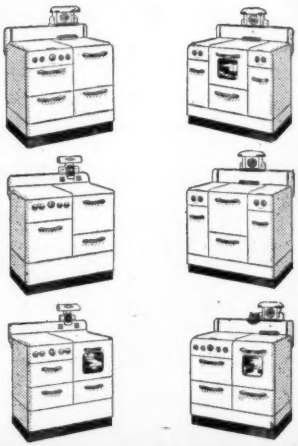
# FLORENCE LP-GAS RANGES

## *are the* PROFIT LINE

• When you get into a huddle with Florence dealers you're in a circle that knows about sound, profitable business.

You'll hear them talk about Florence with such expressions as: "quick turnover"..."business-like profits"..."small service expense" . . . "a big list of satisfied customers."

And you can't blame them for being enthusiastic! For over seventy years Florence policies have consistently kept dealers in a forefront position. For over seventy years Florence has concentrated on making ranges easier for dealers to sell and topped them off with the closer, friendlier policy that lets them buy direct.



**FLORENCE STOVE COMPANY**... General Sales Offices and Plant: Gardner, Mass. Western Sales Offices and Plant: Kankakee, Ill. Southern Plant: Lewisburg, Tenn. Other Sales Offices: One Park Ave., N. Y.; 1459 Merchandise Mart, Chicago; 53 Alabama St., S. W., Atlanta; 301 No. Market St., Dallas.

**FLORENCE**
*LP-Gas Ranges*

# QUIZ — Competitive Fuels — Oil

• *This department is a monthly feature to stimulate thought and to give operators basic industry facts. Clip out for your notebook or file in a standard, 3-ring, loose-leaf binder. Sources of information: The Bottled Gas Manual, Handbook Butane-Propane Gases.*

| Questions | Answers |
|---|---|
| **1** **Is LP-Gas competitive with oil?** | Yes. LP-Gas can easily compete with oil for cooking and water heating. In many instances, it is more economical than oil for space heating. |
| **2** **What is the heat content of the usual oils used for domestic and commercial purposes?** | Kerosene —133,300 Btu per gallon<br>Range oil —136,000 Btu per gallon<br>No. 2 fuel oil—142,000 Btu per gallon |
| **3** **Roughly, what is the relative consumption of kerosene and propane for domestic cooking?** | About 2 pounds of propane are required to do the cooking accomplished with 1 gallon of kerosene on a blue flame burner. |
| **4** **What is a fair consumption figure for a range oil type kitchen stove?** | Consumption of range oil will be about 1½ gallons per day for cooking and an additional 1 gallon for water heating. |
| **5** **With range oil selling for 8 cents per gallon, what price would propane have to sell for to compete on a price basis for kitchen use?** | Propane at 5 to 8 cents per pound will successfully compete with 8 cent stove oil for domestic use. |

**6**

**What price can LP-Gas sell for to compete with 8 cent stove oil for heavy commercial use?**

In the average restaurant where cooking, baking and water heating are going on all day, other than gas is the best and most economical fuel to use. LP-Gas at twice the price per gallon can compete with stove oils, due to the savings involved in top burner performance, flexibility of use of modern kitchen equipment and availability of hot water when needed, as well as the ability to use gas-fired coffee urns, steam tables, toasters and other individual appliances.

**7**

**How does LP-Gas sit in on the water heating load compared to oil for domestic use?**

The best oil water heaters are a source of trouble and maintenance, and vary in efficiency. In the home where the total cost of water heating with LP-Gas is low, the competition is not on fuel cost but on LP-Gas performance. The modern home demands a gas water heater.

**8**

**How does LP-Gas compare with oil in the commercial water heating field?**

As in commercial cooking, the fuel cost is not all the cost in water heating. Original cost of good oil heaters, maintenance and loss of efficiency allow the LP-Gas dealer to compete with oil at a much higher per pound fuel price, with a resulting lower overall operating cost to the consumer.

**9**

**When is LP-Gas competitive with oil for space heating?**

In the areas where LP-Gas is sold in semi-bulk, it is definitely competitive with oil, due to the high cost of installation and maintenance of central oil heating plants.

**10**

**Is propane sold in cylinders competitive with oil for heating?**

In many installations when the heat load is intermittent, as in auto courts, small dwellings in the South and Southwest, the saving in initial cost and maintenance is sufficient to justify the use of cylinder delivered propane.

---

**SUBJECTS TO BE COVERED IN FORTHCOMING ISSUES:**

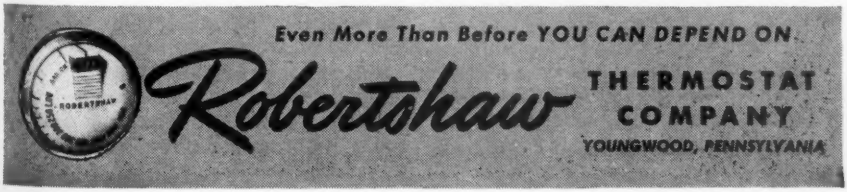
**● Competitive Fuels ● Electricity ● Gas Lighting ● Space Heating ● Tools for Your Kit.**

# EVERY RANGE SALESMAN SHOULD HAVE THIS *Free Handbook*

SALESMEN will find a wealth of valuable material in this free, pocket-size handbook—chock-full of interesting pictures, diagrams and basic information on modern range cooking and how to sell it. Telling the story of "Measured Heat", this book explains the fundamental, scientific principles of roasting, baking, whole meal cooking, etc. Cooking failures are analyzed and remedies suggested.

You can use this handbook as a basis for your sales training program. Write for your free copies today.

**FREE**—a copy for each of your salesmen. Write for *"More Income for Gas Range Salesmen"* today.



# CURRENT READING

**• Reviews of new books, pamphlets and articles published in recent magazines of interest to technicians and executives in the liquefied petroleum gas industry. Those interested in reading any complete article or book should write to the publications named.**

•

**Non-Destructive Testing of Refinery Equipment**—C. D. Havens. "Petroleum Engineer," June, 1946, pp. 92, 95, 96. Two methods are now being used in many refineries to inspect equipment at regular intervals: the Magnetic Particle inspection method and the Fluorescent Penetrant inspection method. In applying the first method, a suitable magnetic field is created in the part under test, and very finely divided ferro-magnetic particles are dusted or blown over the surface of the part. The second method consists of applying a liquid penetrant containing a material that fluoresces with a brilliant light when exposed to the rays of the so-called "black light."

**Increase Output of Alkylate Over 600% by Removing Equipment Bottlenecks**—G. B. Ryan and D. G. Stevens. "National Petroleum News," June 5, 1946, pp. R-411, etc. Use selected feed and eliminate equipment bottlenecks. That was the formula applied by one refinery to its $H_2SO_4$ alkylation plant, designed for an output of only 225 b/d, to increase production to nearly 1600 b/d. Built for peacetime operation before Pearl Harbor, the plant was designed to run on excess refinery butanes, high in normal butane and olefins but low in isobutane. When war struck, the refinery engineers shopped around and found an additional source of feed stock from another company, which produced an excess of the short isobutane. That move more than doubled the output. Next the engineers surveyed the equipment. They found that the existing reactor, deisobutanizer, debutanizer, and alkylate re-run towers could be operated efficiently at loads far in excess of their designed capacities with only minor changes in existing equipment. These changes and how they were applied are described in this article.

**Wartime Refinery Operations and Their Effect upon Motor and Aviation Fuels**—W. M. Holaday. S.A.E. Journal, June, 1946, pp. 303-309. The effect of wartime refinery operations, including the installation of new refining equipment, on the quality and quantity of products that will be available for operating automotive and aircraft equipment is fully discussed in this article.

**Extinction of propane and butane flames by dichlorodifluoromethane,** by G. W. Jones and F. E. Scott, Investigation Report No. 3908, U. S. Bureau of Mines. 8 pp. 2 figs. As a part of its program of promoting safety in mining and other industries, the Bureau of Mines investigates the explosion hazards of combustible gases, vapors, and solids and the various means and methods of controlling and mitigating explosions.

***See the latest*** Universal "L-P" Gas Ranges in the complete display of all models at GAMA's exhibit in the Atlantic City Auditorium during the AGA convention and LPGA North Eastern Section Conference.

***For the latest*** in the nation's outstanding "L-P" Gas Ranges, come to booth 417-18-19, right in front of the center of the stage.

***It will be*** an exhibition worth while seeing—and, of course, we will be happy to renew old acquaintances and to make new friends.

**L-P GAS**
*The Preferred Cooking Fuel*

**L-P UNIVERSAL**
*The Preferred Gas Range*

**CRIBBEN & SEXTON**
**UNIVERSAL *Gas* RANGE**
700 N. SACRAMENTO BLVD. CHICAGO 12, ILLINOIS

# Many Are the Uses of LP-Gas— Everyone a Load Builder

By HAROLD W. SMITH*
President, American Liquid Gas Corp., Los Angeles

THE THINGS we have done in the past, and are doing today, are the stepping stones of the accomplishments of tomorrow. The "know how" we have acquired, coupled with the better available materials to work with, and the fact that more people are daily becoming more interested in the LP-Gas field, will make our progress more rapid.

HAROLD SMITH

Let us first look at the industry, generally. The development of industrial installations followed our simple domestic installations. Since our systems had given such complete satisfaction for all domestic uses, it was not long before the manufacturer was willing to give an attentive ear to the local LP-Gas dealer who had suggested this new fuel as a solution to his plant fuel problems.

Due to certain inherent qualities, LP-Gas often gives many advantages over other fuels and these advantages may be utilized more and more to expand the whole industry.

First, we have a highly refined fuel, very free from impurities. This fuel is composed of hydrogen and carbon, and contains hydrogen in a larger proportion by weight than do other readily obtainable hydrocarbon fuels. The proportion of carbon and hydrogen are constant for either butane or propane, whereas other liquid petroleum fuels usually consist of blends of various hydrocarbons, and therefore do not have any definite hydrogen to carbon ratio.

This property of LP-Gas enables us to offer a correct combustible mixture at all times, and also permits us to maintain a controlled atmosphere—which may be a neutral, oxidizing, or reducing atmosphere, as required. Such control is extremely important in furnace operations, as it facilitates the producing of special results in the material being heated when a slight departure in the property of the atmosphere would mean failure of the heat treatment.

For instance, carbonizing of steel

* A paper delivered before the Oklahoma LPGA convention held in Oklahoma City, Sept. 18-21.

THE

# "WATERTENDER"

OUR LATEST DESIGN CONTROL
FOR
LIQUEFIED PETROLEUM GAS

## *Safe Lighting*

**With the *Watertender*, it is impossible to get a flow of gas to the main burner until safety pilot is lighted and operating.**

## *100% Shut-off*

**In case of pilot outage, the flow of gas to the pilot light and main burner are shut off instantaneously.**

**THE WATERTENDER**

- **has a pressure valve (C valve) incorporated in the gas cock to adjust the flow of gas to the main burner.**
- **is equipped with a thermocouple pilot.**
- **is so designed to make it possible to incorporate a gas filter for the pilot light.**
- **has gas cock handle with visual indication of the pilot "on" and "off" position.**

***We manufacture a complete line of controls for natural, manufactured and liquefied petroleum gas.***

***WE SELL ONLY TO MANUFACTURERS OF A.G.A. APPROVED WATER HEATERS.***

Domestic
WATER HEATER
THERMOSTATS
AND AUTOMATIC PILOTS

**DOMESTIC THERMOSTAT COMPANY**
156 W. Pico Blvd., Los Angeles 15, Calif.

to exact specifications may be readily accomplished by controlled direct firing, using LP-Gas. Direct firing saves fuel, gives quicker heating, and the initial cost of equipment is lower—as is also the operating cost.

Next, we have a fuel that develops its own vapor pressure; which force is ideal for transferring the fuel from one place to another, without pumps or any other outside power requirements. This feature is not only important in moving the fuel itself, but this fuel presssure may also be used to inspirate air, producing any desired combustible mixed gas, having any desired Btu form.

Refrigeration — a subject growing in importance every day—has brought out another very important feature of LP-Gas; it can be used to produce direct refrigeration. Since this gas at normal temperature would be a vapor, if not confined under pressure, and since all liquids, when evaporating extract heat from both the liquid itself and its surroundings, by expanding the liquid from its restrained tank pressure to atmospheric or slightly above, the consequent evaporation extracts heat

**This irrigation well in West Texas is owned by the Consolidated Gas & Equipment Co., of Plainview and Amarillo, equipped with an A. O. Smith deep well, three-stage pump which handles approximately 1200 gallons per minute. Well depth is about 180 feet. They use a Chrysler industrial engine, 8 cylinder motor, C-36, which has about 164 HP. An Algas converter and carburetor is used on the engine. A 1,000-gallon tank is supplied with the installation and the motor and pump is all installed and the installation started ready for the farmer. This engine uses 3½ to 4 gallons of fuel per hour.**

# RELIANCE REGULATORS

## ARE DESIGNED AND TESTED TO MAKE L-P GAS BEHAVE

A Reliance Regulator will make gas behave in every conceivable regulating application in the liquid petroleum industry. The wide range of sizes with many variations of Reliance Regulators provide positive and uniform control for all pressure conditions in L-P gas lines.

Since the birth of the L-P gas industry, Reliance Regulators have been preferred for their originality of design, by which positive lock-up and absolute control of steady outlet pressure are assured under variable loads and inlet pressures.

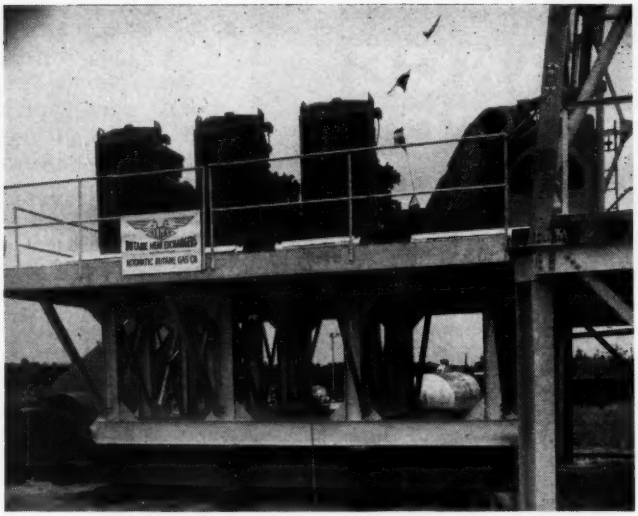
Simplicity reduces installation costs, minimizes maintenance service, reduces size and weight for convenient handling. To make your L-P gas system behave, install Reliance Regulators.

BULLETINS ARE AVAILABLE ON THE COMPLETE LINE OF APPROVED RELIANCE REGULATORS.

**AMERICAN METERS**

**RELIANCE REGULATORS**

RELIANCE REGULATOR CORPORATION
1000 MERIDIAN AVENUE, ALHAMBRA, CALIFORNIA

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**This is an every day oil field drilling rig using Algas heat exchangers installed by the Automatic Butane Gas Co., Houston, Texas. These drilling rigs usually require at least 1000 gallons of butane-propane fuel per day.**

▼

from the liquid and from the surroundings. An extremely cold temperature may thus be produced.

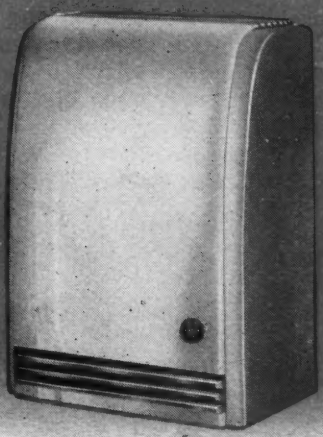
We thus see that LP-Gas enables us to provide great extremes of heat and cold; mixed with air, it can burn with a flame temperature above 3500°F.; and, on the other hand, expanding from a liquid to a vapor, it can produce temperatures down to 44° below zero.

In bringing the above advantages existent in LP-Gas to your attention, I have done so with the thought that they will stimulate your foresight into the main industrial uses to which this fuel may be put. So far, most of the uses have been centered around the customary fuel applications and practices; now, by using the special features which we know to exist in this fuel, we can go on far beyond what has already been accomplished, and bring the LP-Gas industry to a position of outstanding importance.

Foods are now being processed by quick dehydration in such a manner that small volumes of highly concentrated products may be shipped anywhere, kept almost indefinitely, and when prepared for use, taste like fresh products. The quick-dehydrating engineers claim a similar future to that which we are now experiencing with quick frozen foods. LP-Gas is an ideal source of heat for these new dehydrators. The drying of cotton, alfalfa, potatoes, rice, fruits, and many other commodities offers a large outlet for our fuel, which the dealer can deliver to any location where dehydration is being employed.

Just as LP-Gas is ideal for processing, cooking, and dehydrating

# LET BEAUTY BUILD YOUR HEATER SALES



## New RHEEM gas console heater

Women customers will like the simple gracious lines of this Rheem gas console heater. Its handsome antique finish brings new beauty to any interior. Tall functional design increases heat circulation and requires less floor space. Narrow base of heater permits installation on strip between wall and rug.

Sales are easy because the low price and economical operation fit any budget. Approved by American Gas Association, whether vented or unvented. Available in three popular sizes: 25,000; 35,000; 50,000 B.T.U. Get full information today. Write Rheem, 570 Lexington Avenue, New York 22, New York.

**RHEEM** ... *making houses into homes*

RHEEM

foods, it can also be used at the very start of the production of foods. Here the farmer uses it as his tractor fuel instead of gasoline or distillate. He may also use it to destroy weeds and insects by means of the new burners now being produced and developed for this purpose. Many of us know this as flame cultivation or weed-burning. The vaporization of butane-propane fuel is readily handled by equipment already installed on the tractor for engine operation and with only a slight modification.

In arid sections of the country, large pumps operated by LPG-powered engines supply water for irrigation. Cultivating and harvesting can all be accomplished by Gas-powered tractors and other equipment, resulting in the most efficient and lowest-cost operations.

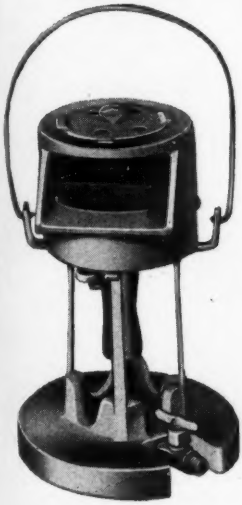
New avenues of progress open up when we consider this fuel for crop heaters. These heaters, be-

▲

**This operation is located in the large iron ore range in Minnesota. This spot was formerly a lake that has been drained. This truck is owned by the Pickands-Mather Co. and is powered with a Model 400 Hall-Scott butane engine. It is a Dart Truck with a special compound transmission unit that permits handling grades from 5% to 12%, hauling 20 ton of iron ore.**

▼

# MAKE MONEY WITH *Mutual*



## TINNER'S FURNACE

Any butane-propane dealer can gain profitable customers for his business with the MUTUAL Line of Tinner's Furnaces. They are built to meet requirements of skilled tradesmen who demand fast, efficient heat for their work. If you haven't sold portable furnaces—begin today.

### *MUTUAL Streamline Tinner's Furnace No. 3 Does the Job Faster — Better — Cheaper!*

The Mutual Streamline Furnace is constructed to place the heat directly under the heel of the soldering iron, so that a minimum amount of time is wasted in waiting for the iron to heat and assures even heat distribution. Up to 6" lead melting pot may be used at the same time. Furnace head and stand measures 12" high—5¼" in diameter. It may be used with No. 11 or No. 21 cylinder.

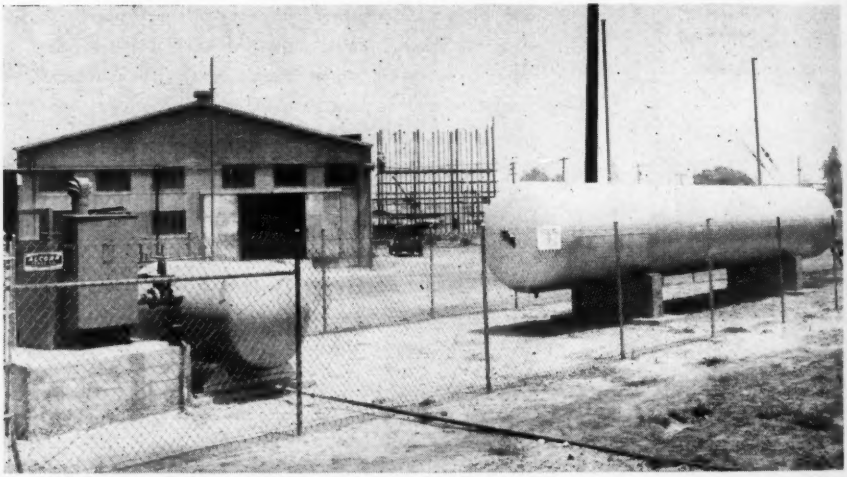
### *MUTUAL Bench-type Tinner's Furnace No. 3A May Be Used With Any Type Cylinder.*

The Bench-type tinner's furnace is extremely flexible and may be used for many different types of jobs under varying conditions. It can be used with any size cylinder, as it is attached by hose. Uses either direct tank pressure or regulator.

*Mutual* **LIQUID GAS EQUIPMENT CO., INC.**
3600 West Imperial Highway, Inglewood, Calif.

sides giving radiating and circulating heat, produce carbon dioxide and water vapor which, when used in a confined space, saturate the air with these products—the very products the leaves of the plants are endeavoring to extract from the air as food. Having the air saturated with these products, acts upon the plant like a hypodermic, and the plant growth is exceedingly rapid—vegetables and flowers become much larger than normal and by properly controlling heat, the products are ready for market before the usual time. This will result in extra profits for the producers. We may think of this method as ideal for greenhouses, hot-beds, etc., but they could be used over large areas of land, where the heat and products of combustion could be retained to a large extent by covering the area with cheese cloth or other available material.

In areas devoted to citrus crops, berries, apples, peaches or other fruits, crops may be assured by protecting the blossoms and fruit from frost by gas heaters. Here again, the inherent qualities of our fuel give many advantages. It will flow to all parts of the system under its own pressure, and this pressure may be automatically regulated to give any amount of heat required at the burners. Being able to utilize the fuel both in its liquid and gas form enables us to use small pipe lines throughout the system and



**The gas plant division of American Liquid Gas Corp. installed this plant for the A. R. Maas Chemical Co. of South Gate, Calif. It is a 10,000 gallon butane-propane storage with air mixing equipment. The gas is used to heat a rotary kiln for drying of chemicals. Butane-propane replaced 10,000 cu. ft. per hr. natural gas requirement and they now use about 3000 gallons of LP-Gas per day. A duplicate of this plant is now in process of installation. The owner claims better apparatus operation control by LP-Gas than they have been able to get with natural gas because the heavier specific gravity of the gas does not cause back-fire in the burners.**

# NOW!

## THIS NEW

# PROPANE TANK

## for Home, Farm, Ranch

ASME CODE CONSTRUCTED
EVERY TANK DEHYDRATED
HYDROSTATICALLY TESTED

AUTOMATICALLY
WELDED
CONFORMS TO NBFU CODE
PULL-TESTED LIFTING LUGS
INSURANCE COMPANY INSPECTED
PERIODIC X-RAY ON PRODUCTION LINE

This tank is bound to be good because it is made in one of the nation's largest and finest equipped pressure vessel plants originally designed to manufacture the big, high pressure, high temperature vessels in which Propane itself is made.

Write for illustrated literature and prices.

Write for Literature

EFFICIENCY BS&B RELIABILITY

Ask Your BS&B Man

# Black, Sivalls & Bryson

(INC.)

still secure all the advantages of a gas fuel at the burners.

In many sections of the country, oil has been used for this purpose, but the following disadvantages have been encountered — smokey fires that cover the entire neighborhood with a cloud of smudge. This smudge also adheres to the leaves and bark of the trees, preventing them from breathing properly, which causes the tree to produce more foliage than crop in order to breathe. With energy and growth going into foliage rather than to the crop, the result is a lower crop yield, even though the heat produced has dispelled the frost and saved the crop from freezing.

Coupled with the many advantages LP-Gas can give the farmer in producing his crops, we must not forget the fact that this same fuel can give his wife every advantage she would obtain from fuel service in the large cities—modern, small, electric lighting units operating on LP-Gas; gas refrigerating units, automatic water heaters, space heating furnaces and the latest types of automatic cooking stoves, all of which are now at her command, making life on the farm a pleasant one with all modern conveniences available.

Leaving the farm and taking a quick look at the gas industry with its domestic and industrial uses, we see the LP-Gas plant replacing the old type plant which produced artificial gas from coal or oil. This new equipment will produce a cleaner gas of constant heating value automatically, as the system may require it, and at a cost that will bring many gas utilities out of the red and into substantial black figures.

**Remote Districts Easily Served**

The industrial plant remote from the gas line can now secure all the advantages that gas gives those plants on the gas mains. For those industrial plants already on the gas lines, standby butane or propane plants may result in a saving over the old gas rates, as a low surplus rate is usually available when a standby system is installed.

Having its own gas utility assures the industrial plant that it will have gas available for every working day of the year, thus avoiding costly shutdowns and loss of production.

LP-Gas may be used for all types of gas furnaces: smelting, drying, heat treating—such as normalizing, annealing, hardening, direct or indirect-fired furnace, of the oven or kiln type. Along with all the industrial uses of heat, we also have the many uses of refrigeration.

We also have LP-Gas as a fuel for prime movers such as power units, generators, compressors, etc. Metal cutting, brazing, and other such uses, give industry in general its most modern, economical and versatile fuel.

In connection with the domestic load, we have possible the expansion into hotel, the auto court, the larger restaurant, public institutions, bakeries, cotton gins, dehy-

# SECURITY

## Will Stay Ahead!

William T. Rasch
President

## Vigorous Leadership Backed by Over 40 Years' Experience Insures Future Progress

Horizons are unlimited at SECURITY. The dynamic leadership of President W. T. Rasch and his staff moves forward . . . at an ever-increasing pace. Automatic gas-fired products . . . Winter Air Conditioners, Hot Water Heaters, Gravity-type and Floor Furnaces finer than ever before are rolling from war-enlarged production lines. Each is an example of the forceful application of knowledge and skill gained in over 40 years of design and manufacture . . . painstaking laboratory research and testing . . . the use of finest materials. Now and in the future, you can look to SECURITY for leadership.

A HINT OF THINGS TO COME! Final tests are completed . . . production lines are being made ready . . . soon you will hear about SECURITY'S revolutionary NEW automatic, gas-fired products.

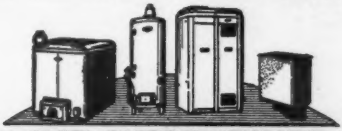
SECURITY MANUFACTURING CO., KANSAS CITY, MO.

Lee W. Rasch
Vice-President

A. S. White
Vice-President

R. R. Cole
Vice-President

C. W. Hazelton



**SECURITY**

GAS FIRED SGP PRODUCTS

The "LONG LIFE" LINE

drators, etc. In utilizing cylinders and small tanks for this increased gas requirement, we often encounter a high-peak load that overtaxes and exceeds the ability of the equipment to supply the gas requirements, especially during the colder periods of the year.

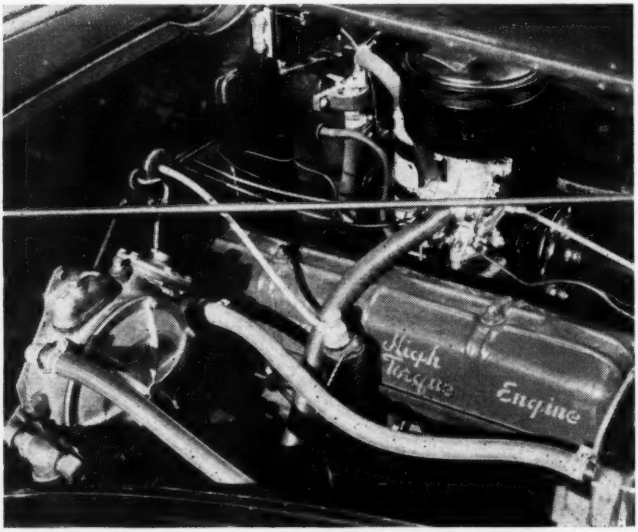
As we mentioned before, the evaporation of LP-Gas draws heat from the liquid. Even though the fuel remains in the tank, by drawing the vapor from the top of the tank, we reduce the temperature inside the tank and if this is continued long enough, we eventually chill the liquid to the point where it will not evaporate and we have lost our vapor pressure.

Small vaporators have been developed which automatically take care of these high-peak requirements by converting liquid into vapor, thus enabling the equipment to meet the gas demand under all conditions. These vaporators are entirely self-contained units connected to any size fuel tanks by a small liquid line.

### Vaporizing Is Automatic

When the pressure is high in the tanks and the atmospheric heat is sufficient to take care of vaporizing the fuel, the auxiliary heater does not come on in the vaporator; the unit simply regulates the gas pressure. When the demand for gas increases beyond this point, a special valve in the vaporator functions to turn on additional heat, regulating liquid supply to the unit and producing a continous supply of dry vapor at its outlet.

This unit is as safe, sure and automatic as your hot water heater in your home. By use of this vaporator, many difficulties encountered

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**A TYPICAL ALGAS CONVERTER AND CARBURETOR INSTALLATION ON A CHEVROLET TRUCK**

▼

# HERE'S WHERE *Hot Water Satisfaction* BEGINS!

## THERE IS NO GAMBLE TO THIS "WINNING TIP"

The dealers who display, merchandise, sell and install United States Water Heaters are winning in every way — new friends, loyal customers, substantial profits. There is satisfaction in every sale — for both dealer and customer — why? Because United States Water Heaters are High in Quality — Low in Cost — Economical in Operation — Dependable in Performance — Long in Service.

Exclusive performance features are built into all models, insuring positive satisfaction, whether the model be for bungalow, mansion, apartment house, restaurant, hotel, school, or any other domestic or commercial application.

## STANDARDIZE ON U•S•H

A wide range of models provides dealers with unlimited fields of sale from one water heater manufacturer, thus permitting a dealer to standardize on the famous line of United States Water Heaters for the requirements of all of his customers.

Take this "Winning Tip" — display, sell and install "U.S.H." Water Heaters.

U•S•H

MFD. BY UNITED STATES HEATER CO. COMPTON, CALIF. U.S.A. REG. U.S. PAT. OFF.

**UNITED STATES HEATER CO.**

133 EAST PALMER AVENUE • COMPTON, CALIFORNIA

by dealers on their installations having high peak gas load have been overcome.

I would like to mention LP-Gas in connection with internal combustion engines and transportation. Here the fuel gives peak performance and permits increased power output of the engine, at the same time greatly reducing engine wear and cost of upkeep. Practically no carbon, lead or gum formations are encountered as occurs with other fuels. Exhaust gases are exceptionally free from poisonous carbon monoxide.

### Ideal for Engine Use

After its preliminary years of development, LP-Gas carburetion became solidly established as the ideal fuel system for heavy duty and economical internal combustion engine operation. Such extreme conditions as were required in the Mesabi Iron Range, where trucks had to haul 20 ton payloads up grades which range from 5% to 12%, and at temperatures considerably below zero, proved the dependability of operation on this fuel, and produced startling reduction in cost of operation as compared to previous fuels.

Similar experiences have been developed in the strip coal mining and other heavy duty hauling operations.

The oil field drilling and pumping operations have found considerable economy in the use of LP-Gas.

The above emphasis on heavy duty operations is not meant to infer that butane carburetion on lower horsepowered engines is not also dependable and economical. Such well known firms as Carnation Milk Co. and Hertz-Driv-Ur-Self fleets have enjoyed the economies of butane-propane fuel for years.

You all know the octane value of LP-Gas is even higher than that of fighting-grade aviation gasoline —that no fuel pump is required to deliver the fuel to the engine and that, being a gas, the correct proportions of fuel to air can be maintained and delivered to the engine at all times. Also, no vapor lock occurs, as we use the fuel in its vapor form.

Have you ever stopped to consider how the refrigeration properties of this fuel can be used to cool the bodies of large trucks or busses as they travel along, at no extra cost? This will result in greater comfort to passengers, more efficient deliveries of perishable produce, because with the same fuel we use in the engines the truck bodies may be heated in winter and cooled in summer to any desired temperature.

### Will Apply to Railroads

Future LP-Gas systems applying to railroad refrigerated cars will enable a car to cross the country, standing on a siding or traveling, always at a set pre-determined temperature inside the car. There will also be several thousands of pounds of weight saved, as compared to the old type of refrigeration units, besides the time and expense involved in icing-up the old-type cars.

LP-Gas units for washing and pre-cooling of the products picked

OPERATI
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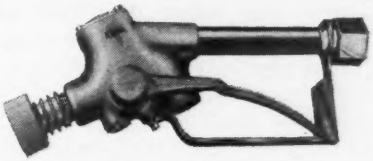
# ADEL L.P.G. DISPENSING EQUIPMENT

**is designed to meet the rigid requirements of the Bureau of Weights and Measures, the National Board of Fire Underwriters and the L.P.G. Industry.**

**You will find ADEL'S modern, high-pressure Liquefied Petroleum Gas Dispensers *right* for your operational needs.**

**The ADEL Buta-Fill Nozzle is fast coupling, automatic, light of weight and very maneuverable with ¼ inch and 1 inch connections.**



ADEL BUTA-FILL NOZZLE

*Please address all inquiries to*

# ADEL

**PRECISION PRODUCTS CORP.**
**10609 VAN OWEN STREET, BURBANK, CALIF.**

**WRITE FOR FREE CATALOG AND NAME OF DISTRIBUTOR IN YOUR TERRITORY**

in the field and packed in the cars have been used for several years. Besides using the refrigeration quality for ordinary refrigeration purposes, this phenomena may be used to provide a form of supercharging of an engine to get more power from the unit. Here, instead of using a mechanical supercharger, which requires power and considerable upkeep expense to pour additional gas into the cylinders, we refrigerate the in-going fuel charge, thus reducing its volume, and permitting a larger charge of fuel to flow into each cylinder, which gives us more power.

In hot climates, or extremely heavy duty operation, the oil supply of the engine may be cooled, thus protecting the bearings under heavy loads.

From the many uses outlined herein, we can appreciate and foresee that the LP-Gas industry is destined to be one of the major industries in the world. Those of us pioneering the industry, now should strive to create a foundation so sound and substantial that each step forward will be made easy.

The producers of these fuels have their problems. In the past, this fuel was considered as a waste, or by-product, but this industry is now reaching a state where this is no longer true. Therefore, the dealer should keep this thought in mind and develop their domestic uses, their industrial, farming and trucking requirements in such a way as to produce a steady requirement of fuel each month throughout the entire year.

The recent efforts of many of us in the LP-Gas industry to develop load-leveling business will lead to a profitable operation for the refiner, for the transportation operators, and for the dealer in keeping his own delivery and storage facilities busy constantly.

This may be accomplished by studying the demands of your community, then balancing the space heating and domestic load with other equally important uses, such as trucking, tractor working, irrigating loads, dehydration, brooding and various types of industrial requirements, so that each month will require practically the same volume of fuel.

## "Hot Water Magic" Shows Importance of Water Heaters

As an initial step in promoting the sale of automatic gas water heaters by focussing national attention on home laundering and the importance of high water temperatures to comfortable living, the American Gas Association has just published an elaborate, three-color booklet entitled "Hot Water Magic."

Simply written and attractively illustrated, this brochure will bring to housewives and students, valuable information concerning new methods required for laundering new fabrics and finishes.

The booklet was produced in two editions; one for the use of home economists in colleges and schools, and the other for distribution to customers of the local gas companies. The consumer booklet is the same as the school manual except that it carries a heavier sales emphasis on gas water heaters and gas clothes driers.

The same experienced organization, augmented in strength and familiar with the practical, modern needs of the gas industry, is actively functioning.

First, to restore, as soon as adequate materials become available, the full volume enlarged production so critically needed to meet today's urgent requirements.

Secondly, to incorporate in future products—without slow-down of immediate needs—the new and progressive improvements which have for so many years maintained American Meter Company leadership.

AMERICAN
METER COMPANY

## Okla., Chicago Conventions Will Be Reported Next Month

Just as the October issue of BUTANE-PROPANE *News* goes to press, industry conventions are scheduled for Chicago and Oklahoma City.

The first is that of the National Butane-Propane Association, Sept. 23-25. It is a national gathering with exhibits of equipment and appliances.

In Oklahoma City from Sept. 19-21 was held the Oklahoma state association meeting. Manufacturers' exhibits were also on display there.

**H. Vinton Potter, director, "New Freedom Gas Kitchen," says, "You can't be a magician without a rabbit." He will talk at the Oklahoma LPGA convention.**

Both of these meetings will be reported in detail in the November issue of BUTANE-PROPANE *News*.

In this issue is published one of the papers read at Oklahoma City. The subject is the industrial and other loads, and the author is Harold W. Smith, president, American Liquid Gas Corp., Los Angeles.

## Two New Butane Firms Established in Arkansas

John O'Neal has established the Butane Service Co. in Glenwood, Ark. The firm will operate three 6500-gallon butane storage tanks, one 5500-gallon propane storage tank, a large explosion-proof loading and unloading pump, and three large delivery trucks.

The total investment in the plant is stated to be $30,000.

Ted Meek has organized the Butane Appliance Co., Inc., at Marvell, Phillips county, Ark.

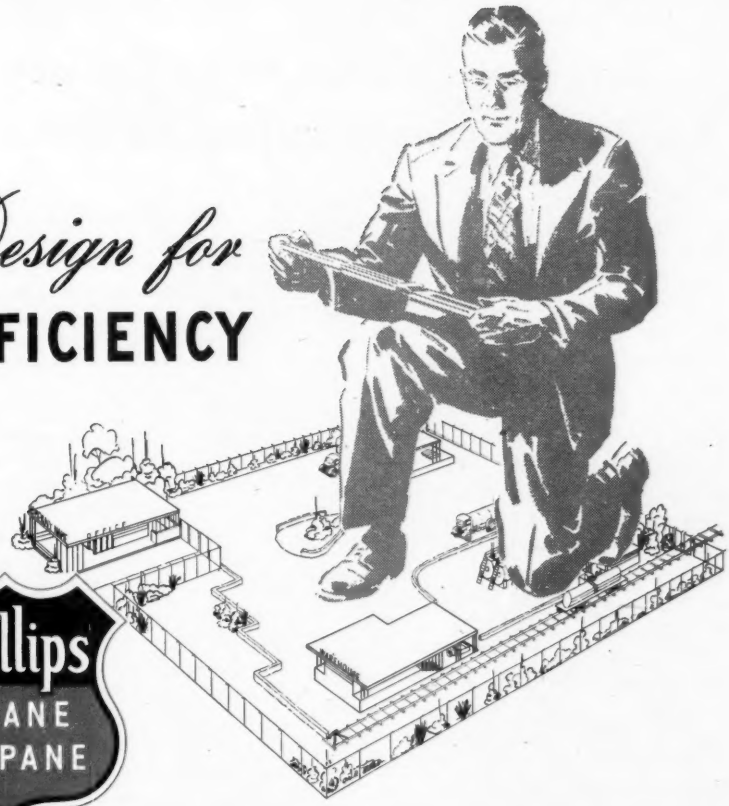
## George Pruitt, of Fraley & Co., Dies in Abilene, Texas

George Pruitt, manager of the Big Springs, Tex., plant of Fraley & Co., Abilene, died July 5. He served for many years in the liquefied petroleum gas industry and was a veteran employe of Fraley & Co.

**CALENDAR**

**Week of Oct. 7—American Gas Association, Atlantic City.**
**Week of Oct. 7—Northeastern Section, LPGA.**
**Oct. 11—California Natural Gasoline Association. Annual Fall Meeting. Ambassador hotel, Los Angeles.**
**Oct. 13-14—Colorado Liquefied Petroleum Gas Association, Denver.**
**Oct. 21-22—Kansas Liquefied Petroleum Gas Association. Wichita. Allis hotel.**

# *Design for* EFFICIENCY



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**Whether your bulk station is large or small it is important to have the benefit of the best plant and equipment designs to help you attain maximum operating efficiency. A Phillips representative is ready to keep you fully posted concerning latest engineering developments. In addition to this, he will be glad to furnish you with proved methods concerning a successful marketing program. Contact our nearest Branch Office.**

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BARTLESVILLE, OKLAHOMA

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THE WORLD'S LARGEST MARKETER OF LIQUEFIED PETROLEUM GAS

# *Safe Motor Vehicles and Equipment For Transporting Liquefied Petroleum Gas*

IT is a maxim in accident prevention work that safety begins on the drawing board. This is particularly true in designing equipment for the safe transportation of liquefied petroleum gases by motor vehicle.

Here we have to cope not only with the safe retention of a flammable gas in liquid form within a pressure vessel, but also with the safe movement of this pressure vessel from one location to another through heavy highway traffic on all types of roads in all kinds of weather.

It can readily be appreciated that the design and construction of such a pressure vessel and motor vehicle as an integral unit involves considerably more than merely placing a tank on a chassis. In fact, the task is one of much greater complexity than, for instance, the design and construction of a safe gasoline tank-truck or trailer. Moreover, the problem of planning for and equipping liquefied petroleum gas motor vehicles with proper valves and fittings, safely placed for filling, delivery and emergency relief purposes, is of unusual importance because of the potential hazards involved.

**Selection of Tank-Truck or Trailer**

1. Procuring and equipping a tank-truck, tank semi-trailer or tank trailer for transportation of liquefied petroleum gases in bulk is a matter worthy of exhaustive consideration. A serious accident which might result from operating an unsuitable motor vehicle could involve expense far exceeding the vehicle cost.

In selecting the motor vehicle manufacturer, the purchaser should choose a concern with experience and a good reputation, not only in vehicle manufacture, but, specifically, in the production of vehicles expressly for the transportation of liquefied petroleum gases. A manufacturer whose previous production has been confined to other types of motor vehicle assemblies may turn out a product entirely suitable for transporting liquefied petroleum gases if he has made an extensive study and obtained comprehensive data on safe design. This is because the manufacture of liquefied petro-

**This is third in a series of pamphlets published by the National Conservation Bureau, New York City, on fundamental principles governing safe operation of motor vehicles and equipment concerned with transporting liquefied petroleum gas.**

**The first two were entitled "Liquefied Petroleum Gas—What It Is, How It Acts" and "Safe Operation of Motor Vehicles Transporting Liquefied Petroleum Gases" (see Butane-Propane NEWS, June, 1946, page 58).—Editor.**

We'll see you in
ATLANTIC CITY
AT BOOTHS
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A. G. A. ANNUAL CONVENTION
...WITH Jewels of Cooking Performance
AUTOMATICALLY YOURS.
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MANUFACTURERS OF
"America's Finest Gas Ranges"
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leum gas vehicles involves special technical considerations, due to the nature of these gases, which are maintained in liquid state under pressure and are flammable.

Attempts at makeshift mounting of pressure vessels on trucks or trailers for transporting liquefied petroleum gases, in lieu of properly designed units, have on several occasions ended in tragic consequences. Cargo hauling of these gases should be conducted only in tanks permanently attached to the vehicles in strict accordance with recognized principles of safe design.

**Design of Pressure Vessels**

2. Pressure vessels and chassis should be designed so that the unit will be adequate for the following pressures, loads and stresses:

Internal pressure.

Impact loads, including rapidly fluctuating pressures.

The weights of the vessel and normal contents under operating conditions.

Superimposed loads.

Wind loads.

Localized stresses due to supporting legs, ring girders or saddles.

Temperature differences.

In the design of the pressure vessel and its anchorage to the chassis, either of the following codes should be used as the minimum standards:

American Society of Mechanical Engineers, Boiler Construction Code, Section VIII, "Unfired Pressure Vessels," as amended.

American Petroleum Institute—American Society of Mechanical Engineers' Code, "Unfired Pressure Vessels for Petroleum Liquids and Gases," as amended.

State and municipal legal requirements, if any, must also be observed.

3. The pressure vessel should bear a stamping or attached name plate in accordance with the requirements of one of the above mentioned codes and the governing state or municipal authority. The purchaser should obtain a copy of the manufacturer's data report for each pressure vessel.

4. The tank should be designed to withstand the pressure at 100°F. of the gas or mixture of gases producing the highest pressure which may conceivably be transported by the truck or trailer at any time, this pressure to be determined according to the factor of safety set forth in the legal requirements or code. Where varying mixtures of butane and propane are customarily transported, it is advisable to design all such pressure vessels for a working pressure based upon propane in order to be certain that the tank strength will be adequate for any emergency.

**Vehicle Requirements**

5. If the vehicle is to be used in transit between states, Interstate Commerce Commission Motor Carrier Safety Regulations (Revised), Part 7, "Transportation of Explosives and Other Dangerous Articles," as amended, must be complied with. The specific rules relative to liquefied petroleum gas vehicles are contained in Section 7.6 and in Appendix 7.6 of these regulations.

6. If there are no specific legal requirements in the territory where the vehicle is to operate, the most

DAY & NIGHT

# Leadership

## ...is based on Buyer Preference for DAY & NIGHT Superiority

DAY & NIGHT leadership means greater prestige, sales and profits for DAY & NIGHT dealers in the Butane-Propane field. This leadership is based on strong buyer preference, widespread demand, better products, continuous advertising, and honest distribution during more than a third of a century. DAY & NIGHT products are sold through wholesale plumbing supply jobbers in most territories. For the name of your nearest DAY & NIGHT jobber write us direct.

**LECTRO-GLO PORTABLE HEATERS**
**All models A. G. A. approved for liquefied petroleum gases. Specially designed burners for Butane-Propane gases require no adjustment. Gives MORE effective warmth with LESS bottled gas in three ways: by radiated, reflected and circulated heat.**

***America's Finest Water Heater***

**WATER HEATERS • WALL HEATERS • PANELRAYS • CABINET HEATERS • PORTABLE HEATERS**

**DAY & NIGHT MANUFACTURING CO.**
MONROVIA • CALIFORNIA
*One of the Dresser Industries*

recent revision of Pamphlet No. 58, "Standards of the National Board of Fire Underwriters for the Design, Installation and Construction of Containers and Pertinent Equipment for the Storage and Handling of Liquefied Petroleum Gases," should be followed. Division III of that pamphlet applies specifically to containers and pertinent equipment for the transportation of liquefied petroleum gases.

**Low Center of Gravity**

7. In order to minimize the possibility that the vehicle may overturn, it should be designed so that the center of gravity of the unit will be as low as possible, consistent with adequate road clearance.

**Exhaust**

8. The exhaust system, including muffler and exhaust line, shall have ample clearance from the fuel system and combustible materials. Truck muffler and exhaust pipe should be placed as far as practicable from any tank valves, pumps or piping. A muffler cut out should not be used.

**Bumpers**

9. Each vehicle should be equipped with substantial steel bumpers or chassis extension at the rear, of sufficient width and extending sufficiently high to protect the tank piping, valves and fittings in case of collision.

**Fifth Wheel and Tow-Bar**

10. The fifth wheel should be ruggedly designed, securely fastened to both units and equipped with a positive locking mechanism which will prevent separation of the two units except by manual release.

11. The tow-bar of all full trailers should be adequate structurally for any weight drawn, properly mounted, without excessive slack, and so designed, constructed, and installed as to insure that the full trailer will follow substantially in the path of the towing vehicle without whipping or swerving from side to side.

**Brakes**

12. Each motor vehicle tractor, tank truck, tank semi-trailer and tank trailer should be provided with adequate brakes. These brakes from the time of application should be capable of bringing the unit or any combination of units to a stop within a distance of 30 feet from a speed of 20 miles per hour. Trailer brakes should be so equipped that they will apply automatically either in case of engine failure, or of accidental parting of detachable connections.

**Tires**

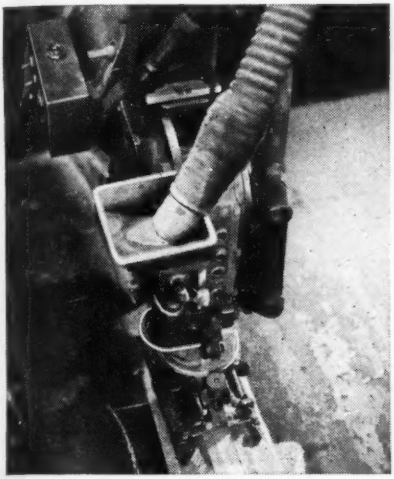
13. Each motor vehicle tractor, tank truck, tank semi-trailer and tank trailer should be equipped with tires that will safely support the maximum gross vehicle weight. No tire should be loaded beyond the maximum load specified by the manfacturer of the specific size and type of tire being used.

**Securing Tank to Vehicle**

14. If the tank on a liquefied petroleum gas motor vehicle unit was to shift on the vehicle, either

# HOW a.C.f. PUTS AN ADDED MEASURE OF SAFETY INTO HIGH PRESSURE STORAGE TANKS

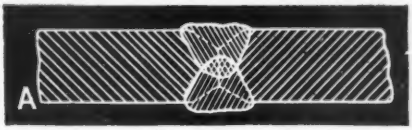
Here is a manufacturing technique that eliminates welding flaws! Submerged Arc Welding, pictured below, is automatically controlled — producing a weld of consistent strength



and ductility greater than that of the parent metal!

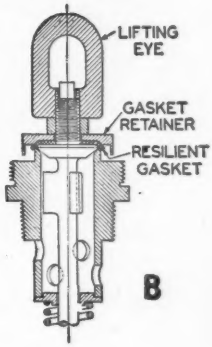
This manufacturing method effects a maximum overlapping of the inner and outer penetrations shown in diagram "A". This results in the elimination of defects in the weld metal.

The most advanced safety controls such as this resilient gasketed safety




valve, "B", assure the proper release of gas in case of excessive pressure. Positive safety is again assured by the most exacting inspection and testing. For greater safety in storage tanks specify a.C.f.

All types are available in capacities up to 30,000 gallons.




a.C.f.

## STORAGE TANKS

AMERICAN CAR AND FOUNDRY COMPANY
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## REGO AUTOMATIC CASH and CARRY PACKAGES

RegO Automatic Cash and Carry Packages include a No. 2419 Automatic Two-Stage Control Regulator, direct or remote mounted indicator, two pigtails with built-in excess flow check valves and combination support bracket and hood assembly.

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# *All These Advantages!*

**RegO Packages For Cash and Carry Systems Are Designed Around The Major Features of The No. 2419 Automatic Two-Stage Control Regulator**

- Automatic throw-over to "Reserve" cylinder when "Service" cylinder is exhausted provides constant, uninterrupted gas supply.
- Two-stage pressure reduction assures accurate regulation of gas pressure at all times.
- Convenient wing nut connector makes it easy to hook-up cylinders to system by hand.
- Reliable indicator shows whether "Service" or "Reserve" cylinder is supplying system—eliminates guesswork!
- Choice of direct or remote mounted indicator.
- *Complete Safety!*

**REGO**
**LP GAS EQUIPMENT**

The **BASTIAN-BLESSING** Company
**4201 W. Peterson Avenue Chicago 30, Illinois**

EQUIPMENT FOR USING AND CONTROLLING LP GASES

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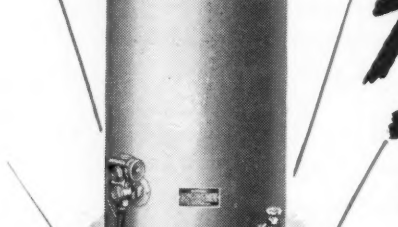
HOFFMAN

Known Far and Wide

. . . For maximum value plus unexcelled performance. Every installation of C&L Hoffman automatic storage water heaters assures customer satisfaction. Your reputation will be safe-guarded with C & L Hoffman . . . resulting in continued business growth and steady profit.

*Descriptive literature gladly sent upon request.*

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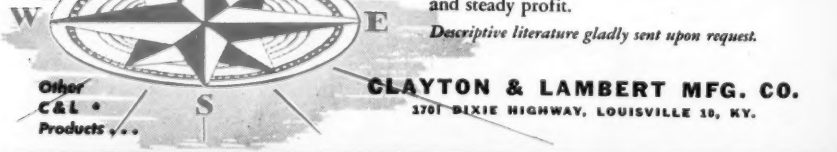
Other C&L Products . . .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due to sudden starting, stopping, or change in direction, or because of an accident, a pipe fitting, valve or connection might shear off or be otherwise damaged. Such occurrences have resulted in serious accidents. It is of vital importance that the pressure vessel be firmly secured to the vehicle.

15. If the unit is of the "frameless" type, permanent anchorage should be provided to prevent movement of the pressure vessel relative to other parts of the vehicle. Supports should be constructed and attached to the tank in accordance with standards in Paragraph 2.

16. If the unit is of other than the "frameless" type, two design features are involved:

First, stops should be provided on the vehicle or tank to prevent dislodgement of the tank. Back slippage should be prevented by stops or other effective methods.

Second, hold-down devices should be provided which will anchor the tank securely on each side to the vehicle frame. The nuts of bolts when used on hold-down devices should be of the castellated type with cotter pins or locking wires; or elastic nuts should be used.

**Baffles or Bulkheads**

17. In order to prevent excessive stresses due to shifting of the cargo, baffles or bulkheads may be necessary in larger tanks as specified in I.C.C. Motor Carrier Regulations and the A.P.I.-A.S.M.E. Code. Baffle or bulkhead diaphragms should be flanged over at the edge and welded to the shell at the edge of the flange, so as to permit for expansion of the tank without excessive local stresses.

**Skid Tanks**

18. Skid tanks should never be used for routine delivery of liquefied petroleum gases. Their use is rarely justifiable except on short hauls of relatively small quantities of gas, where it is actually essential that the transport tank be used also for storage.

19. When skid tanks are loaded on trucks for transportation from and to the user, adequate anchoring of the tank to the truck body, so that it will not become dislodged, even in a collision, is of vital importance. See Paragraph 15 relative to anchoring methods.

20. Special attention must be given to the protection of the tank and its piping and fittings. None of these should project beyond the sides or ends of the vehicle. Moreover, pipings and fittings should be kept inside a bumper placed across the ends of the skids, and supporting plates should be securely welded from the piping to the shell.

Excellent additional data on skid tank protection is contained in the latest edition of the "Handbook of Butane-Propane Gases."

**Manholes and Handholes**

21. To facilitate internal inspection and maintenance, it is good practice to equip liquefied petroleum gas tanks with manholes or handholes.

**Fittings**

22. The minimum standard for

all fittings should comply with those of the National Board of Fire Underwriters' Pamphlet No. 58. State and municipal legal requirements, if any, must also be observed.

23. All fittings should be extra heavy and designed specifically for liquefied petroleum gas use.

The following fittings are required to meet these standards:

Relief valves.

Excess flow valves.

Quick closing valves, including those actuated by hydraulic pressure.

Back pressure check valves.

Vent valves.

Liquid level gage devices.

Thermometers.

Pressure gages.

Shut-off or stop valves.

Hose.

Piping should be of extra heavy construction. Cast iron fittings should not be used.

24. There are almost as many different locations where attachments are placed on tanks by manufacturers as there are different types of motor vehicle tank bodies made to take care of the requirements of the transport operators. None of the existing regulations specify any particular part of the tank where they should be placed.

The important thing to consider is that wherever located, attachments should be of the proper type, properly installed, secured and adequately protected so that no damage or breakage can result while in regular service or if the vehicle becomes involved in an accident.

Methods for protecting attachments against damage or breakage include:

(A) Location in depressed recesses.

(B) Protective rings or enclosures.

In most instances, location of attachments within depressed recesses in the tank is the method to be preferred. Such recesses or enclosures, however should be vented to prevent gas accumulation.

25. In addition to complying with existing rules and regulations applying to attachments, it is desirable also to comply with the following items in order to insure the greatest degree of safety.

(A) All screwed valves, fittings or other connections should be sealed against leakage by the use of a joint compound that will provide a pure non-metallic film.

The compound should provide protection against corrosion or deterioration, make a perfect seal, not take a permanent set, make it possible to remove valve or fittings at any time without damage, not be soluble in water, oil, or gas and withstand a pressure 250 lbs. per sq. in. gage. Ordinary pipe dope should not be used.

(B) The piping between the pump and tank should be arranged and secured so there will be no strain or vibration sufficient to cause failure while traveling over the road or if vehicle is involved in an accident.

(C) Discharge openings and inside valves located on the bottom of the tank should be covered with wire mesh screen housing not coarser than No. 18 mesh to prevent foreign particles from interfering with the closing of the valve.

(D) The pumps and fittings should have a clearance above the road surface at least as great as the minimum road clearance of the vehicle chassis.

(E) All piping located after the ex-

# So easy to Sell!

**O'KEEFE & MERRITT** promised you a finer precision L-P gas range. Here it is! Check the many extra time-saving, step-saving exclusive features! A range that is factory-built and tested solely for use of Butane or Propane. You'll be proud to sell the finest O'Keefe & Merritt ever built.

**O'Keefe & Merritt Co.**
*3700 E. Olympic, Los Angeles 23, Calif.*

*The New*
O'KEEFE & MERRITT
GAS RANGE

cess flow valve should be of a diameter and length to permit proper pressure differential so that the excess flow valve will close if failure of pipe occurs.

(F) Discharge openings from relief valves should be at the highest point on the truck or trailer. This should be accomplished by piping of a size at least equal to the discharge opening of the valve, substantially supported and fitted with loose raincaps.

For further specific information on valves, fittings and other attachments refer to the most recent edition of the "Handbook of Butane-Propane Gases."

**Accessories**

26. Accessories for the safe operation of motor vehicles should be provided and carried as called for by state regulations or the Motor Carrier Safety Regulations of the Interstate Commerce Commission when they apply.

A minimum list of accessories follows:

(A) Emergency Signals consisting of one of the following: 3 red electric lanterns, 3 red flags, 3 portable type red reflectors. These should be maintained in good condition and stored on vehicle where they may be readily available for use.

(B) Hand Fire Extinguishers, at least one unit to be located outside the vehicle's cab, selected according to the following table prepared by the National Board of Fire Underwriters, according to values determined by Underwriters Laboratories, Inc. In addition, it is advisable to have one small unit, for electrical fires located inside the cab.

**Classification of Fire Extinguishers**

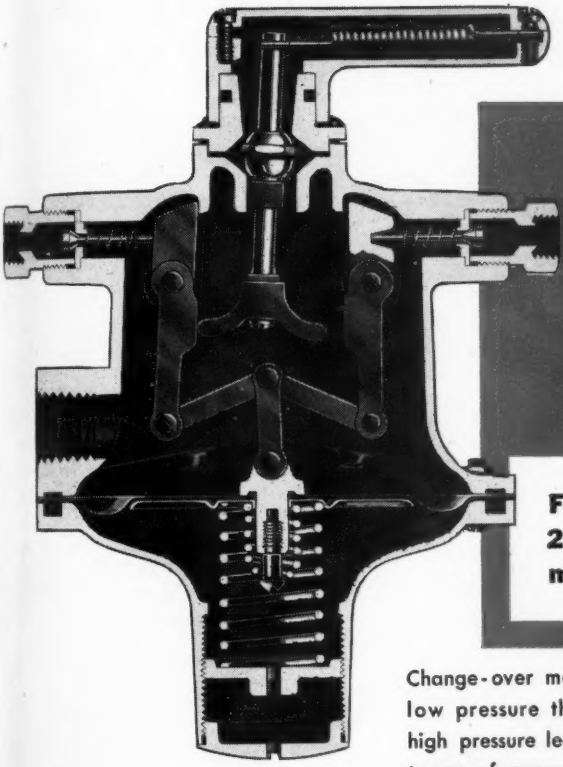
The Classification "B 2, C 1" signifies that the appliance so classified is suitable for use on Class "B" fires (oil fires), and Class "C" fires (electrical equipment), and that two such appliances are required to make one unit of first aid fire protection.

(C) Chock Blocks. Blocks to place at the rear wheel to prevent vehicles

| Type | Size | Classification | |
|---|---|---|---|
| Foam | 2½ and 5 gals. | B 1 | |
| | 1¼-1½ gal. | B 2 | |
| Loaded Stream | 1¾ and 2½ gal. | B 2 | |
| | 1 gal. | B 4 | |
| Vaporizing Liquid | 1 gal., 2 gal. and 3 gal. | B 2 | C 1 |
| (carbon tetrachloride) | 1 qt., 1¼ qt., 1½ qt. and 2 qt. | B 2 | |
| Carbon Dioxide | 15 and 20 lbs. of carbon dioxide | B 1 | C 1 |
| | 7½ lbs.* and 10 lbs.* of carbon dioxide | B 2 | C 1 |
| | 4 lbs. of carbon dioxide | B 2 | C 2 |
| | 2 lbs. of carbon dioxide | B 4 | |
| Dry Compound | 15 and 25 lbs. of Dry Chemical | B 1 | C 1 |

*With 24" cone.

# FISHER TYPE 940 TWO-DRUM MANUAL THROW-OVER REGULATOR



**INTEGRAL CHANGE-OVER MECHANISM IN LOW PRESSURE AREA**

**Furnished with two 20" pigtails and mounting bracket**

Change-over mechanism operates under low pressure thus eliminating potential high pressure leakage common with other types of manual throw-over regulators.

- **CAPACITY - 100 cu. ft. per hour or more.**
- **SETTING - 11" W. C. at 30 C. F. H. 100 lbs. inlet.**
- **CYLINDER CONNECTIONS - POL, 968 or 982 copper tubing pigtail.**
- **OUTLET CONNECTION - ½" female pipe thread.**
- **RELIEF VALVE - Built integral; set and factory sealed for 1 lb.**

**FISHER GOVERNOR CO.** 988 Fisher Bldg. **MARSHALLTOWN, IOWA**

EASTERN OFFICE: 411 E. 42nd St. New York 17, N. Y. WESTERN OFFICE: 2334 E. 8th St. Los Angeles 21, California

rolling down hill in the event brakes fail to hold, should be provided and carried. It is good practice to affix these blocks permanently to the vehicle by means of chains, and to provide chock carriers in which the blocks may be kept when not in use.

(D) Lighting Devices and Reflectors to include head-lamps, tail-lamps, stoplights, reflectors, clearance-lamps, side marker lamps.

(E) Windshield Wipers.

(F) Defrosting Device.

(G) Rear Vision Mirror.

(H) Horn.

(I) Safety Chains for full trailer in case of two-bar breakage.

(J) Emergency parts and accessories, such as spare electric bulbs, fuses, tire chains.

## Automotive Filling Station Open in Prescott, Ariz.

According to word received from Charles L. Jorgensen, president of the Prescott Butane Co., Prescott, Ariz., a modern service station for supplying trucks, cars and other automotive equipment with butane for power has been established by his company in Prescott.

The station will have storage capacity of 1750 gallons and will be open 24 hours a day. It is located at 922 E. Sheldon St., on the regular truck route.

The station is known as the Whipple Motor Service and handles Shell products, including Shell butane.

## New Firm Will Build Butane Tanks in Smyrna Beach, Fla.

Erection of a building which will be used exclusively for the manufacture of various sized butane gas tanks has been announced by T. F. Hall, Hall's Machine Shop, New Smyrna Beach, Fla.

The new building, to be located at the corner of Cypress and Downing, will probably be of concrete block construction.

Much of the steel for the manufacture of the tanks has already arrived in Smyrna Beach.

**The new butane dispensing station of Prescott Butane Co., Prescott, Ariz.**

# The Importance of Finish

How important is the finish of an LP-Gas Cylinder? Just as important to you in selling the cylinder as the finish in selling an automobile.

The best of paint is expertly sprayed on the prepared heated surface and carefully inspected. Then it is oven-baked for permanence and luster. Result: A perfect coat which you can use with your own label as the tank reaches you, or as a perfect base for your own color if you do a complete re-paint job.

Painting, like other operations, is done "the Trageser way;" there is no better. *Write, phone or wire for prices.* Telephone EVergreen 8-7700. *Trageser Copper Works, Inc., 5000 Grand Ave., Maspeth, L. I., N. Y.*

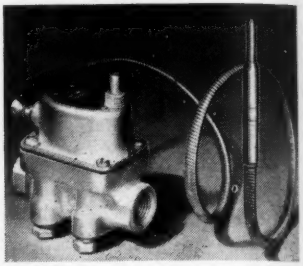
## Among Trageser Advantages

*Most modern LP-Gas Cylinder plant in the country . . . 96 years of making high quality pressure vessels . . . no excess weight but ample for strength to resist handling . . . completely dehydrated and immediately sealed . . . cylinders painted hot and dried by convection heat . . . rust-preventive weather-proof base is perfect for customer's coat.* JMLco T-K1

**TANKS by TRAGESER**

***IT'S THE FIRM THAT MAKES THE CYLINDER THAT MAKES THE DIFFERENCE***

# New MR-2 SAFETY THERMOVALVE



THIS new electro magnetic thermovalve assures unfailing safety in gas control applications. Used on space and unit heaters, central and floor furnaces, water and range heaters, hot water and steam boilers. Handles manufactured, natural or LP-Gases.

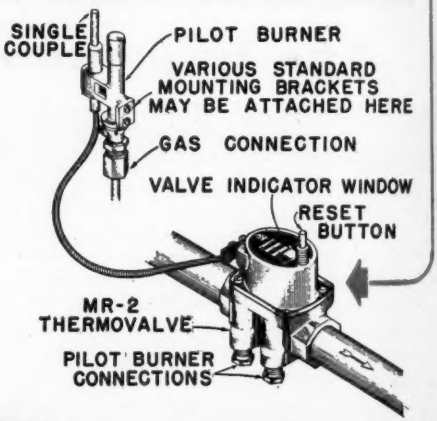
On the installation diagram, the new MR-2 valve and the new 26-R Pilot Burner are used for out-pilot safety control. No outside current is required. Valve holds open until released by pilot-flame failure. 100% gas shut-off will be maintained until pilot light is reignited and valve manually reset by push button.

For further information, contact your nearest factory branch or distributor, or write for Catalog 52-B and Manual FI-101.

Check these outstanding features:

- Streamlined design.
- High-flow capacities.
- Visual valve position indicator.
- Design simplicity.
- Sealed electro magnetic assembly.
- Heavy duty 5/16 round thermocouple.
- Flexible armored cable leads.

## MR-2 INSTALLATION




**GENERAL CONTROLS**

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FACTORY BRANCHES: Philadelphia, Atlanta, Boston, Chicago, Dallas, Kansas City, New York, Denver, Detroit, Cleveland, Pittsburgh, Houston, Seattle, San Francisco. Distributors in Principal Cities.

## You Can't Figure Profits Till You Know

# Fuel and Delivery Costs

By C. R. BAILEY
National L-P Gas Institute, Tulsa, Oklahoma

THE LP-Gas business* involves services to domestic users by several thousand dealers. It is estimated that there are roughly 6000 dealers, 3000 of whom provide services for domestic tank installations. The remainder are in the bottled gas business. This discussion deals with domestic installations.

C. R. BAILEY

In contrast, the natural gas business is operated by a relatively few large corporations so that economic studies of the consumer requirements have been made and are known with some accuracy.

Economic considerations of that industry have been simplified by use of the "degree day" concept. The temperature inside a house is usually kept at 72 to 76°F. during the day, the period during which gas is turned on more or less. The outside temperature varies considerably. The heat in the house may or may not be entirely lost during the hours of the night when the gas is turned off. All the variations in conditions from family to family habits and in houses would indicate that it would be difficult to define the "average house" from the standpoint of heat requirements.

The Weather Bureau provides information relative to the variable factor which determines heat requirements; namely, "outside temperature." Actually heat requirements depend upon the difference between inside temperature and outside temperature. This difference may be stated in terms of degrees Fahrenheit with reference to a standard "base" temperature. The Weather Bureau takes 65°F. as the standard base (inside) temperature. If the outside temperature were exactly 64°F. persistently for the 24 hour day the difference in temperature would be one degree for one day and the result would be one "degree day."

The Weather Bureau office in Tulsa has provided reports covering the nine months period for which heating was required for the season 1945-46. Information from those reports will be found tabulated in Fig. 1. The number of degree days for each date in the

* A paper delivered at the District 5 convention of the National Butane-Propane Association in Fort Worth, Texas, June 10.

month is shown as well as the total degree days in the month for the season, September through May, for Tulsa. It will be noted that in September, 1945, there were five days during which heat was required, the first of these being Sept. 13 which was 3 degree days cool.

**Based on Average Use**

By studying a long period of accumulated statistics of natural gas requirements of the average Oklahoma user it is found that he requires the equivalent of 0.258 gallons of LP-Gas per degree day. (The term LP-Gas as used in this discussion applies to 70% propane-30% butane mixture.) Therefore, if we multiply the number of degree days for the month as shown in the Weather Bureau data by the factor 0.258 we arrive at the number of gallons of LP-Gas equivalent to the natural gas requirements for heating by the average user of that gas.

For the three months (July, August, and June) during which house heating was not required, the value 39 gallons is shown on the chart as a fixed requirement. This value is the average requirement for cook stove, refrigerator, and water heater and is taken as constant throughout the year. To this value is added the number of gallons of the gas required for heating for any given month in order to find the total requirements for that month.

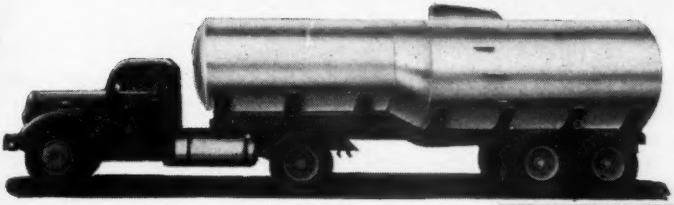
For example, for October the number of degree days was 159. This multiplied by 0.258 gives 41 gallons of gas required for heating. By adding the 41 gallons for heating to the basic value of 39 gallons required for range, water heater and refrigerator, we have the total gas requirement for the month of October as 80 gallons for the average user having modern conveniences. In this way the stepwise curve on the chart attached (Fig. 2) titled "Butane-Propane (30-70) Requirements" was constructed to show the number of gallons required by month by the average very modern user of L-P gas.

The requirements of the average user of LP-Gas are increasing. That this is true may be seen from the annual "Marketed Production of LP-Gas," released by the U. S. Bureau of Mines. In spite of the small amount of equipment and appliances available for new installations, there was a reasonably large percent increase in the domestic use of the gas last year.

The stepwise curve refers to the scale of gallons on the left. Whereas, the cumulative overall curve showing the summeration of all previous requirements by months refers to the scale of gallons of gas shown on the right. The information shown on this chart will be used in further discussion below.

With reference to the "Marketed Production of LP-Gas," it is seen that in 1945 the domestic consumption of this gas was estimated to be 540,000,000 gallons. If the number of dealers serving domestic tank installations was 3000 (as estimated by good authority in the industry), then the average dealer marketed 180,000 gallons of gas. But it was seen above that the average consumer in Oklahoma re-

# TRANSPORTATION TANKS



## COMPLETE

### *Ready to GO*

When you order a high-capacity truck tank for your butane or propane operations, you want to know it will be soundly built, for long service, by men who have the engineering knowledge and experience to do the job.

***McDONOUGH STEEL CO.** ***tank installations have these three essentials: sound engineering, finished craftsmanship and exact conformity to specifications.***

*PATRICK W. McDONOUGH, President*
*McDonough Steel Co.*

**McDONOUGH STEEL CO.**

FORMERLY BOILER TANK & PIPE COMPANY

800 75th AVENUE · OAKLAND 3, CALIFORNIA

TABLE 1.

| *Tank Size Gallons* | *Cost $* | *Difference in Cost $* | *No. Gallons in 10 Years* | *$ per Gallon to Pay Out Difference in Cost* |
|---|---|---|---|---|
| 110 | 125 | 565 | 13,000 | 0.0435 |
| 314 | 230 | 460 | 13,000 | 0.0354 |
| 661 | 375 | 315 | 13,000 | 0.0242 |
| 983 | 440 | 250 | 13,000 | 0.0193 |
| 1325 | 690 | 0 | 13,000 | 0 |

quired roughly 1300 gallons for the year 1945-1946. The average dealer would service 140 installations.

The maximum requirement of the average consumer for any one month was in December when he used approximately 290 gallons. If the customer was to have installed ample storage to meet conditions for one delivery during the month of his peak demand his tank would be 330 water gallon capacity. The average dealer's total tank capacity at his bulk plant would be 140 x 290=4060 gallons of LP-Gas which is equivalent to 4643 gallons water capacity.

For the average dealer, two 1800 gallon water capacity tanks together with his truck tank capacity would enable him to supply his customers during one peak month. This means that there would be sufficient storage at the bulk plant, plus customers tanks, to last two peak months. If the dealer contracted for 15 tank cars per year (one per month plus an extra car each month during the three peak months) he would have an adequate margin of safety for operation.

Under the above conditions, delivering 24 days per month, the dealer would make at least six deliveries per day. If three-fourths of his customers had 100 gallon tanks and the remainder 330 gallon tanks it would be necessary for the dealer to make at least 16 deliveries per day during his peak month when deliveries are under most adverse weather conditions.

Therefore, the transportation and servicing costs to a 100 gallon tank for the average customer should be roughly two and one-half times as great per gallon as for delivery to a 300 gallon tank. This additional cost should be added to the price of the gas to the owners of small tanks to make equitable distribution of costs and to encourage installation of larger tanks.

It is seen from the "Butane-Propane (30-70) Requirements" chart that 1028 gallons of LP-Gas would be required during the six months period of greatest demand. A tank to contain this much gas at 60°F. would have a water capacity of 1,140 gallons. A supplier lists a 1325 gallon tank at $616 FOB factory. From the standpoint of suppliers of the gas this would be the ideal size tank for the average customer with modern conveniences near Tulsa.

# WARREN
## LIQUEFIED PETROLEUM GAS

## WHERE VETERAN EXPERIENCE OFFERS MODERN FACILITIES

**Pioneer experience and modern facilities are the unique combination of factors which insures the uniform high quality of Warren's Liquefied Petroleum Gases. With the greatly increased production facilities of many newly acquired plants, modern terminal storage, loading facilities and great fleet of tank cars, Warren is your logical source of constant supply and dependable service. Contact your nearest Warren office.**

**WARREN PETROLEUM CORPORATION**
TULSA, OKLAHOMA
Detroit Mobile Houston

It is difficult to sell this size tank to the average customer. Some inducement to purchase larger tanks could be offered in the form of price reductions on the gas sufficient to amortize the tank, say within a period of 10 years, so that the more expensive tank will be a good investment. Under this plan prices of gas delivered to the large tank would be normal.

Surcharges would be added to the cost of fuel delivered to smaller tanks such that owners of smaller tanks would pay out the ideal tank within 10 years. A schedule of such surcharges per gallon based on average Tulsa conditions is shown in Table 1.

The above table is given only as an illustration of a method of solving the problem of tank size by use of economics. Such a system could hardly be justified in the vicinity of Tulsa where there is an ample supply of LP-Gas available at all times. However, it can be justified in places far from source of LP-Gas. One may consider smaller tank sizes as "Normal" and refigure the surcharge on the basis; for example, of a 661 gallon tank. Such a schedule is shown in Table 2 and is more applicable than that shown in Table I.

If a dealer operating with Table I surcharges were putting three-fourths of his gas in 110 gallon tanks and the other fourth in 314 gallon tanks his income from the surcharges would be 0.75 x 180,000 x 0.0193=$2,700 from the customers having 110 gallon tanks and 0.25 x 180,000 x 0.0115=$517.50 from those having 314 gallon tanks, making a total of $3,217.50 surcharges per year.

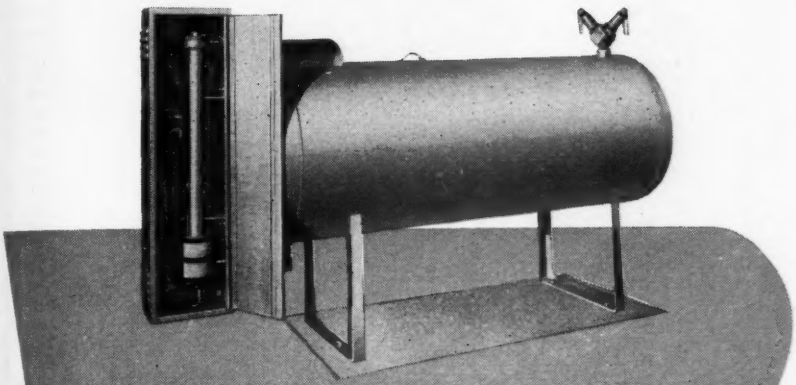
The economic principle of marginal quantities and values can be applied to customers having installations far from any bulk plant. In serving some customers the butane dealer's truck may travel close to an average distance for all customers on a given route. In some cases the truck is sent to deliver to a remote customer so far away that additional charges must be made for the driver's time and trucking cost. For making the longer trips a formula can be used to calculate marginal transportation costs to be added to the normal and surcharge costs.

For example, the driver's time may be costing $1.25 per hour and the mileage cost for the truck may be $0.15 per mile. Under these circumstances, if "T" is the driver's time in hours; "M" is marginal miles driven; and "G" is the number of gallons of gas delivered, the

**TABLE 2.**

| *Tank Size Gallons* | *Cost $* | *Difference in Cost $* | *No. Gallons in 10 Years* | *Surcharge $1 Gallon* |
|---|---|---|---|---|
| 110 | 125 | 250 | 13,000 | 0.0193 |
| 314 | 230 | 145 | 13,000 | 0.0115 |
| 661 | 375 | 0 | 13,000 | 0.000 |

# The MITCHELL L-P VAPORIZING SYSTEM



## THE COMPLETE L-P GAS SYSTEM

**UNIFORM and DEPENDABLE VAPORIZATION REGARDLESS of *TEMPERATURE* or *CLIMATE***

*Dependability* and *Uniformity*, plus *Safety*, are the most important features you look for in an L-P Gas System. . . . These are Mitchell features to provide you with the most advanced system of vaporizing butane-propane gases.

The Mitchell Vaporizing System, a complete L-P Gas System, is independent of temperature or climate. The weather may be hot or cold, but your Mitchell Vaporizing System will deliver a *dependable* supply of vaporized fuel at a *uniform* rate.

This is possible because there are no float valves to freeze up, no carburetor requiring constant adjustment, and no moving parts that can become out of order. The Mitchell Vaporizing System is simple in operation, efficient and economical.

Yes! the Mitchell Vaporizing System is the most modern, *dependable* and *safe* butane-propane gas system available today.

***Write today for more detailed literature.***

**JOHN E. MITCHELL COMPANY**

Manufacturers of Fine Machinery for *Forty Years*

DALLAS, TEXAS

**FIG. 1. TEMPERATURE AND DEGREE DAY DATA — TULSA, OKLAHOMA**
(Based on U. S. Weather Bureau Figures)

| | September 1945 | | | October 1945 | | |
|---|---|---|---|---|---|---|
| *Date* | *Mean Temp.* | *Degree Days* | *Accumulated Degree Days for Season* | *Mean Temp.* | *Degree Days* | *Accumulated Degree Days for Season* |
| 1 | 86 | | | 62 | 3 | 36 |
| 2 | 80 | | | 64 | 1 | 37 |
| 3 | 86 | | | 58 | 7 | 44 |
| 4 | 83 | | | 56 | 9 | 53 |
| 5 | 80 | | | 61 | 4 | 57 |
| 6 | 78 | | | 64 | 1 | 58 |
| 7 | 82 | | | 67 | | 58 |
| 8 | 84 | | | 56 | 9 | 67 |
| 9 | 84 | | | 52 | 13 | 80 |
| 10 | 74 | | | 59 | 6 | 86 |
| 11 | 74 | | | 63 | 2 | 88 |
| 12 | 69 | | | 66 | | 88 |
| 13 | 62 | 3 | 3 | 68 | | 88 |
| 14 | 64 | 1 | 4 | 66 | | 88 |
| 15 | 65 | | 4 | 58 | 7 | 95 |
| 16 | 68 | | 4 | 58 | 7 | 102 |
| 17 | 71 | | 4 | 66 | | 102 |
| 18 | 75 | | 4 | 70 | | 102 |
| 19 | 74 | | 4 | 58 | 7 | 109 |
| 20 | 69 | | 4 | 56 | 9 | 118 |
| 21 | 76 | | 4 | 58 | 7 | 125 |
| 22 | 79 | | 4 | 49 | 16 | 141 |
| 23 | 82 | | 4 | 51 | 14 | 155 |
| 24 | 69 | | 4 | 48 | 17 | 172 |
| 25 | 71 | | 4 | 56 | 9 | 181 |
| 26 | 66 | | 4 | 59 | 6 | 187 |
| 27 | 70 | | 4 | 62 | 3 | 190 |
| 28 | 59 | 6 | 10 | 63 | 2 | 192 |
| 29 | 50 | 15 | 25 | 65 | | 192 |
| 30 | 57 | 8 | 33 | 70 | | 192 |
| 31 | | | | 66 | | 192 |
| Total..... | | 33 | | Total..... | | 159 |

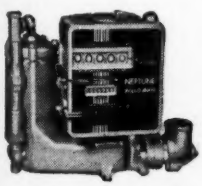
| | November 1945 | | | December 1945 | | |
|---|---|---|---|---|---|---|
| *Date* | *Mean Temp.* | *Degree Days* | *Accumulated Degree Days for Season* | *Mean Temp.* | *Degree Days* | *Accumulated Degree Days for Season* |
| 1 | 70 | | 192 | 48 | 17 | 614 |
| 2 | 56 | 9 | 201 | 42 | 23 | 637 |
| 3 | 47 | 18 | 219 | 30 | 35 | 672 |
| 4 | 56 | 9 | 228 | 32 | 33 | 705 |
| 5 | 64 | 1 | 229 | 40 | 25 | 730 |
| 6 | 77 | | 229 | 48 | 17 | 747 |
| 7 | 71 | | 229 | 48 | 17 | 764 |
| 8 | 56 | 9 | 238 | 49 | 16 | 780 |
| 9 | 42 | 23 | 261 | 32 | 33 | 813 |
| 10 | 48 | 17 | 278 | 24 | 41 | 854 |
| 11 | 50 | 15 | 293 | 28 | 37 | 891 |
| 12 | 62 | 3 | 296 | 32 | 33 | 924 |
| 13 | 52 | 13 | 309 | 30 | 35 | 959 |

Let Neptune Red Seal LP-Gas Meters account for every gallon withdrawn from bulk storage, dispensing unit, or tank truck—reduce handling effort and time—help you to identify leakage—safeguard your profits.

Such dependable, accurate metering gains the confidence of customers—builds goodwill. With a Print-O-Meter Register on your Neptune Red Seal Meter, you can supply every purchaser with an invoice—retain copies for accurate accounting.

Remember, each metered tank truck delivery permits you to "close the deal"—every customer knows exactly what he is buying and paying for. You eliminate the bookkeeping headaches which result from having inventories scattered "all over the map."

So take a tip—investigate the many advantages and profit possibilities of Neptune Red Seal Meters. Write for full information.



**Neptune Red Seal Meters** accurately measure LP-Gas. Long-life measuring chamber has only *one* moving part—the piston. Space and weight saving 1¼ Inch "Compact Type" 1D Meter (at left) has a Print-O-Meter Register that prints delivery tickets. Other register types available.

A-666

# NEPTUNE RED SEAL METERS

**NEPTUNE METER COMPANY**
**50 West 50th St., New York 20, N. Y.**
***Branches:*** **Atlanta, Boston, Chicago, Dallas, Denver, Kansas City, Mo., Los Angeles, Louisville, Philadelphia, Portland, Ore., San Francisco, and Long Branch, Ontario.**

| Date | Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|---|
| 14 | 50 | 15 | 324 |
| 15 | 52 | 13 | 337 |
| 16 | 59 | 6 | 343 |
| 17 | 58 | 7 | 350 |
| 18 | 55 | 10 | 360 |
| 19 | 48 | 17 | 377 |
| 20 | 53 | 12 | 389 |
| 21 | 38 | 27 | 416 |
| 22 | 36 | 29 | 445 |
| 23 | 38 | 27 | 472 |
| 24 | 47 | 18 | 490 |
| 25 | 46 | 19 | 509 |
| 26 | 49 | 16 | 525 |
| 27 | 50 | 15 | 540 |
| 28 | 46 | 19 | 559 |
| 29 | 44 | 21 | 580 |
| 30 | 48 | 17 | 597 |
| Total | | 405 | |

| Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|
| 28 | 37 | 996 |
| 20 | 45 | 1041 |
| 25 | 40 | 1081 |
| 28 | 37 | 1118 |
| 18 | 47 | 1165 |
| 16 | 49 | 1214 |
| 34 | 31 | 1245 |
| 37 | 28 | 1273 |
| 23 | 42 | 1315 |
| 28 | 37 | 1352 |
| 28 | 37 | 1389 |
| 30 | 35 | 1424 |
| 34 | 31 | 1455 |
| 35 | 30 | 1485 |
| 36 | 29 | 1514 |
| 46 | 19 | 1533 |
| 43 | 22 | 1555 |
| 39 | 26 | 1581 |
| Total | 984 | |

**January 1946**

| Date | Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|---|
| 1 | 30 | 35 | 1616 |
| 2 | 40 | 25 | 1641 |
| 3 | 42 | 23 | 1664 |
| 4 | 54 | 11 | 1675 |
| 5 | 56 | 9 | 1684 |
| 6 | 48 | 17 | 1701 |
| 7 | 40 | 25 | 1726 |
| 8 | 36 | 29 | 1755 |
| 9 | 42 | 23 | 1778 |
| 10 | 39 | 26 | 1804 |
| 11 | 42 | 23 | 1827 |
| 12 | 34 | 31 | 1858 |
| 13 | 34 | 31 | 1889 |
| 14 | 34 | 31 | 1920 |
| 15 | 31 | 34 | 1954 |
| 16 | 30 | 35 | 1989 |
| 17 | 37 | 28 | 2017 |
| 18 | 41 | 24 | 2041 |
| 19 | 46 | 19 | 2060 |
| 20 | 38 | 27 | 2087 |
| 21 | 32 | 33 | 2120 |
| 22 | 37 | 28 | 2143 |
| 23 | 42 | 23 | 2171 |
| 24 | 43 | 22 | 2193 |
| 25 | 52 | 13 | 2206 |
| 26 | 26 | 39 | 2245 |
| 27 | 29 | 36 | 2281 |
| 28 | 37 | 28 | 2309 |
| 29 | 43 | 22 | 2331 |
| 30 | 38 | 27 | 2358 |
| 31 | 36 | 29 | 2387 |
| Total | | 806 | |

**February 1946**

| Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|
| 44 | 21 | 2408 |
| 44 | 21 | 2429 |
| 47 | 18 | 2447 |
| 62 | 3 | 2450 |
| 52 | 13 | 2463 |
| 44 | 21 | 2484 |
| 48 | 17 | 2501 |
| 48 | 17 | 2518 |
| 34 | 31 | 2549 |
| 36 | 29 | 2578 |
| 42 | 23 | 2601 |
| 48 | 17 | 2618 |
| 35 | 30 | 2648 |
| 36 | 29 | 2677 |
| 47 | 18 | 2695 |
| 50 | 15 | 2710 |
| 52 | 13 | 2723 |
| 47 | 18 | 2741 |
| 48 | 17 | 2758 |
| 45 | 20 | 2778 |
| 53 | 12 | 2790 |
| 54 | 11 | 2801 |
| 50 | 15 | 2816 |
| 54 | 11 | 2827 |
| 61 | 4 | 2831 |
| 50 | 15 | 2846 |
| 44 | 21 | 2867 |
| 55 | 10 | 2877 |
| Total | 490 | |

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# Bar-B-Kewer*

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American women, with the moral blessing and financial backing of their food-conscious menfolk are demanding the best—and getting it—in Estate Heatrola Ranges. So set a shining example, and brighten the profit-picture in your appliance department. Feature the ranges with *all* the features . . . line up with the Fuel-Proof line . . . Estate Heatrola Gas and Electric Ranges.

*Reg. U. S. Patent Office

FOR CITY GAS
LP (BOTTLED) GAS
ELECTRICITY

ESTATE *Heatrola* RANGES

THE ESTATE STOVE COMPANY • A DIVISION OF NOMA ELECTRIC CORPORATION
FACTORY • HAMILTON, OHIO. EXECUTIVE SALES OFFICES • 55 WEST 13th STREET, NEW YORK 11, NEW YORK

| Date | March 1946 Mean Temp. | Degree Days | Accumulated Degree Days for Season | April 1946 Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|---|---|---|---|
| 1 | 55 | 10 | 2887 | 82 | .. | 3140 |
| 2 | 56 | 9 | 2896 | 78 | .. | 3140 |
| 3 | 64 | 1 | 2897 | 71 | .. | 3140 |
| 4 | 61 | 4 | 2901 | 62 | 3 | 3143 |
| 5 | 60 | 5 | 2906 | 67 | .. | 3143 |
| 6 | 51 | 14 | 2920 | 74 | .. | 3143 |
| 7 | 54 | 11 | 2931 | 74 | .. | 3143 |
| 8 | 42 | 23 | 2954 | 64 | 1 | 3144 |
| 9 | 50 | 15 | 2969 | 58 | 7 | 3151 |
| 10 | 45 | 20 | 2989 | 59 | 6 | 3157 |
| 11 | 55 | 10 | 2999 | 52 | 13 | 3170 |
| 12 | 55 | 10 | 3009 | 52 | 13 | 3183 |
| 13 | 54 | 11 | 3020 | 60 | 5 | 3188 |
| 14 | 58 | 7 | 3020 | 68 | .. | 3188 |
| 15 | 58 | 7 | 3034 | 60 | 5 | 3193 |
| 16 | 50 | 15 | 3049 | 56 | 9 | 3202 |
| 17 | 49 | 16 | 3065 | 57 | 8 | 3210 |
| 18 | 45 | 20 | 3085 | 61 | 4 | 3214 |
| 19 | 50 | 15 | 3100 | 66 | .. | 3214 |
| 20 | 54 | 11 | 3111 | 66 | .. | 3214 |
| 21 | 59 | 6 | 3117 | 68 | .. | 3214 |
| 22 | 62 | 3 | 3120 | 68 | .. | 3214 |
| 23 | 60 | 5 | 3125 | 62 | 3 | 3217 |
| 24 | 62 | 3 | 3128 | 62 | 3 | 3220 |
| 25 | 67 | .. | 3128 | 64 | 1 | 3221 |
| 26 | 56 | 9 | 3137 | 63 | 2 | 3223 |
| 27 | 62 | 3 | 3140 | 68 | .. | 3223 |
| 28 | 66 | .. | 3140 | 72 | .. | 3223 |
| 29 | 68 | .. | 3140 | 63 | 2 | 3225 |
| 30 | 70 | .. | 3140 | 65 | .. | 3225 |
| 31 | 72 | .. | 3140 | | | |
| Total | | 263 | | Total | 85 | |

| Date | May 1946 Mean Temp. | Degree Days | Accumulated Degree Days for Season | Date | Mean Temp. | Degree Days | Accumulated Degree Days for Season |
|---|---|---|---|---|---|---|---|
| 1 | 69 | .. | 3225 | 18 | 66 | .. | 3294 |
| 2 | 62 | 3 | 3228 | 19 | 68 | .. | 3288 |
| 3 | 60 | 5 | 3233 | 20 | 67 | | 3288 |
| 4 | 62 | 3 | 3236 | 21 | 64 | 1 | 3289 |
| 5 | 62 | 3 | 3239 | 22 | 60 | 5 | 3294 |
| 6 | 66 | .. | 3239 | 23 | 69 | .. | 3294 |
| 7 | 58 | 7 | 3246 | 24 | 72 | .. | 3294 |
| 8 | 59 | 6 | 3252 | 25 | 78 | .. | 3294 |
| 9 | 64 | 1 | 3253 | 26 | 64 | 1 | 3295 |
| 10 | 60 | 5 | 3258 | 27 | 66 | .. | 3295 |
| 11 | 51 | 14 | 3272 | 28 | 68 | .. | 3295 |
| 12 | 56 | 9 | 3281 | 29 | 70 | .. | 3295 |
| 13 | 58 | 7 | 3288 | 30 | 73 | .. | 3295 |
| 14 | 68 | .. | 3288 | 31 | 68 | .. | 3295 |
| 15 | 65 | .. | 3288 | | | | |
| 16 | 68 | .. | 3288 | | | | |
| 17 | 68 | .. | 3288 | Total for year | | | 3295 |

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**BRANCH OFFICES: NEW YORK • CHICAGO • HOUSTON • LOS ANGELES**

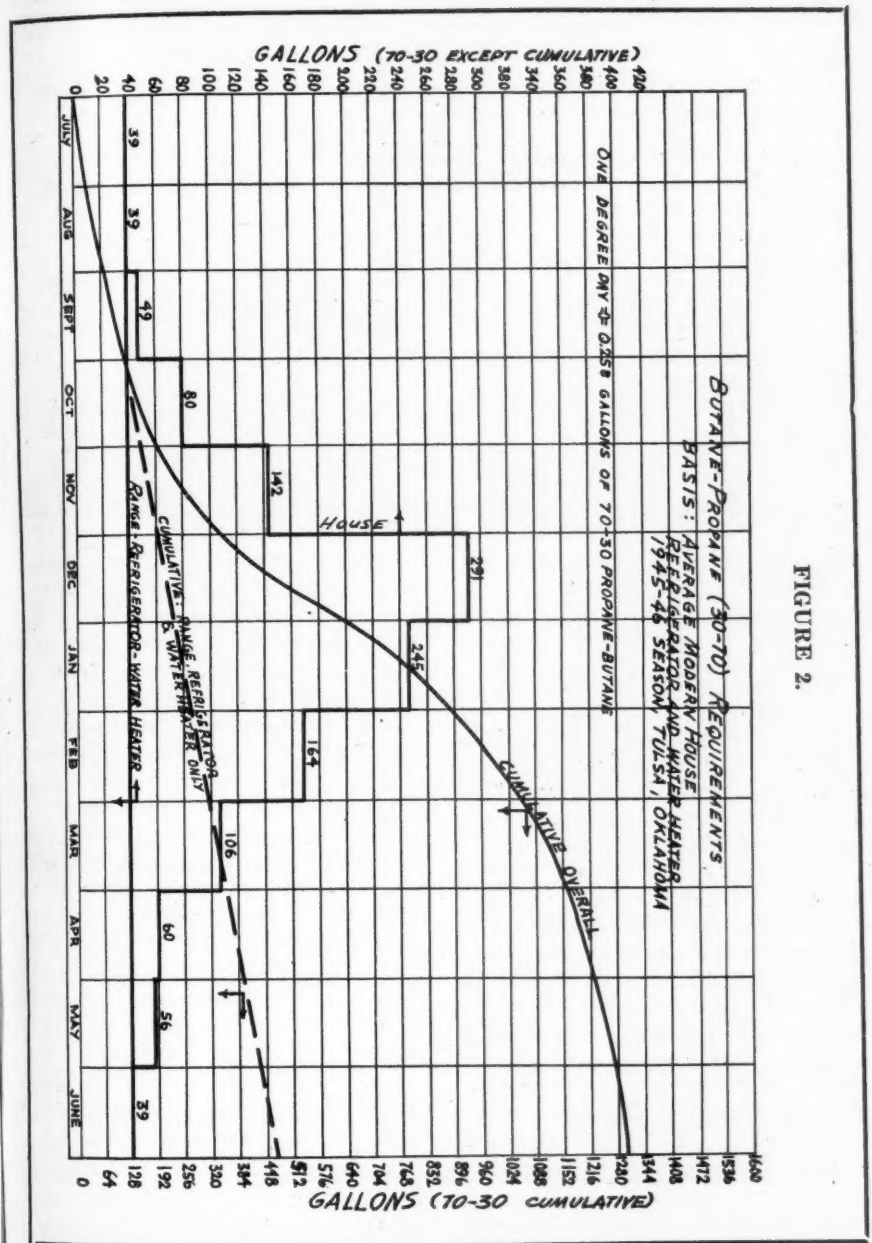
BUTANE-PROPANE (30-70) REQUIREMENTS
BASIS: AVERAGE MODERN HOUSE REFRIGERATOR AND WATER HEATER 1945-46 SEASON, TULSA, OKLAHOMA
ONE DEGREE DAY = 0.258 GALLONS OF 70-30 PROPANE-BUTANE
GALLONS (70-30 EXCEPT CUMULATIVE)
GALLONS (70-30 CUMULATIVE)
CUMULATIVE OVERALL
CUMULATIVE - RANGE-REFRIGERATOR & WATER HEATER ONLY
HOUSE
RANGE-REFRIGERATOR-WATER HEATER
JULY
AUG
SEPT
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUNE
39
39
49
80
142
291
245
164
106
60
56
39

FIGURE 2.

**TABLE 3. COST FIGURES: BASIS—1 (GALLON)**

| | |
|---|---|
| 1. Cost of gas delivered at bulk plant (assumed) | $0.04 |
| 2. Amortize plant in six years: | |
| Plant cost | $16,000.00 |
| No. gallons in six years, 1,080,000 | |
| Amortization cost per gallon = 16,000 ÷ 1,080,000 | 0.0015 |
| 3. Amortize truck in 3 years: | |
| Truck Cost | $3,300.00 |
| No. gallons in 3 years, 540,000 | |
| Amortization cost per gallon = 3300 ÷ 540,000 | 0.0061 |
| 4. Labor and overhead costs | $5400.00 per year |
| Cost per gallon = 5400 ÷ 180,000 | 0.0300 |
| 5. Summation of profit, surcharges and income tax = $10,000 per year | |
| Cost per gallon = 10,000 ÷ 180,000 | 0.0555 |
| Total cost per gallon | $0.09931 |

marginal cost to be added per gallon is given by the equation:

$$X = \frac{1.25\,T}{G} + \frac{0.15\,M}{G} = \frac{1.25\,T \div 0.15\,M}{G}$$

For example, if two and a half hours were required to deliver 400 gallons of gas 20 miles beyond the normal operating radius, the marginal cost would be 1.25 x 2.5 ÷ 0.15 x 40 = $9.13 and the cost per gallon would be $9.13÷400=$0.023.

In figuring the overall selling price of the gas the items in Table 3 may be tabulated (with variations to be made to meet particular requirements).

From the cost per gallon ($0.0993) must be subtracted the average surcharges for filling small tanks which amounts to $3,217.50 per year or $3,217.50÷180,000=0.0178 dollars per gallon overall, leaving a normal cost of the customer of $0.0815 per gallon. To this, of course, must be added the variable surcharge for filling small tanks and marginal cost for delivering gas to remote customers. On the above basis, the normal cost per year to the average user of LP-Gas would be $106 for his fuel.

The above considerations more or less set forth a pattern for economic analysis of gas costs and their distribution. It is not an ironclad analysis applicable to each individual dealer as such. Some dealers are close to source of supply. Some will choose different rates of amortization. The life of tanks will vary with locality and methods of installation. Gas costs and mileages between customers will vary. The number of degree days will vary from year to year and with local climatic conditions. This discussion assumed the dealer was in business and had normal sales outlet. The figures must be adapted to meet the conditions of the individual dealer.

# A. S. M. E. CODE CONSTRUCTED

Designed, manufactured, assembled and supervised by men who have had many years experience in the construction of containers using high grade pressure fuels. Approved by Railroad Commission of Texas; inspected by Ocean Accident & Guarantee Corp., Ltd., bearing the Underwriters' label.

## UNDERGROUND L.P.G. SYSTEMS—101 LBS. W.P.

MODEL B—150 water gallons, 141 net gallons, 24" diameter x 82⅝" long, weight—470 lbs
MODEL C—215 water gallons, 202 net gallons, 30" diameter x 77" long, weight—586 lbs.
MODEL D—288 water gallons, 270 net gallons, 36" diameter x 72½" long, weight—770 lbs.
MODEL E—542 water gallons, 510 net gallons, 36" diameter x 132" long, weight—1280 lbs.
MODEL G—1000 water gallons, 940 net gallons, 36" diameter x 239" long, weight—2150 lbs.

## ABOVEGROUND L.P.G. SYSTEMS—200 LBS. W.P.

| | Par. U-69 of Code Weight Pounds | Par. U-201 of Code Weight Pounds |
|---|---|---|
| P-1 150 water gallons, 125 net gallons, 41" diameter sphere | 450 | |
| P-2 360 water gallons, 300 net gallons, 41" diameter x 79¼" long | 1195 | 1065 |
| P-3 599 water gallons, 500 net gallons, 41" diameter x 122¾" long | 1950 | 1690 |
| P-5 1150 water gallons, 950 net gallons, 41" diameter x 222" long | 3765 | 3065 |

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## Codes And Standard Practices Covering

# Gas Appliance Installation

By H. W. GEYER
Utilization Engineer, Southern Counties Gas Co., Los Angeles

**States, counties and towns will be enacting an increasing number of regulations governing the installation of LP-Gas equipment and appliances. It is better for dealers to be informed upon such matters and aid authorities in framing intelligent laws than to have to contest unfavorable ones after they are passed.**

**Therefore, the accompanying article by H. W. Geyer, directed primarily to utility companies by GAS magazine, will be of general interest in the study of this subject because of showing many of the problems involved in given instances.—Editor.**

THE installation of gas appliances is regulated in different communities through building codes, plumbing codes, gas codes, miscellaneous ordinances or gas company rules. In some cities the various gas appliances are regulated by different ordinances, enforced by different departments.

The Enabling Act in California and some other states permits adoption by cities of codes prepared in book form. The great saving in legal publication costs has made this procedure attractive, particularly to the smaller cities.

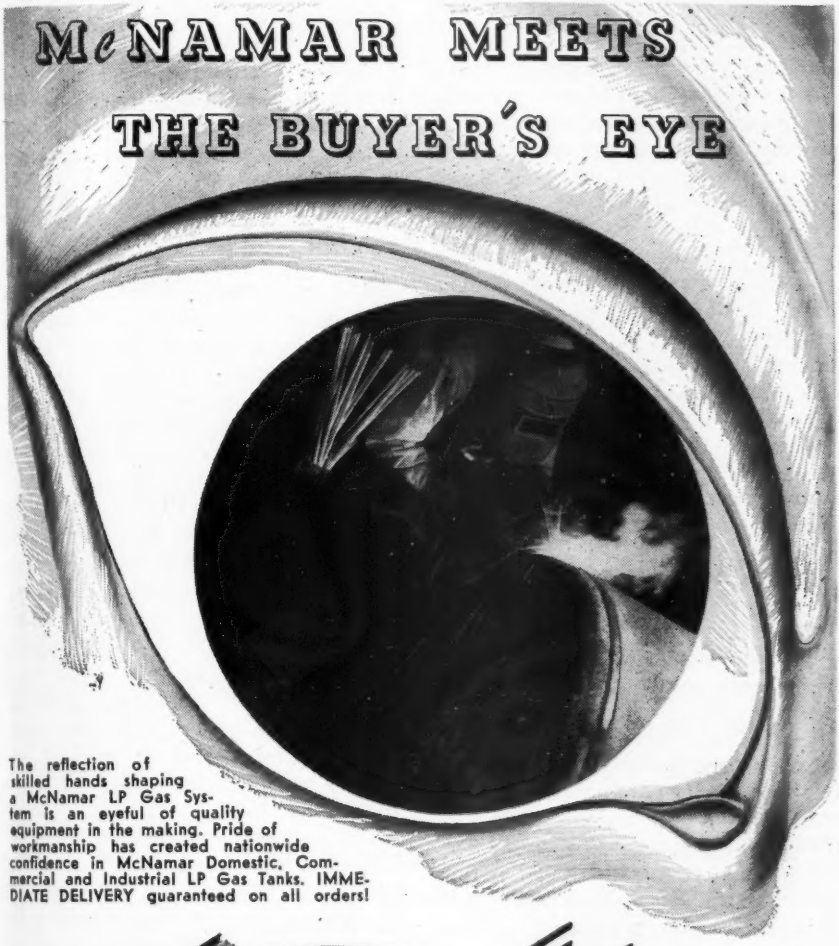
Groups of public officials have organized themselves into associations for the purpose of drafting so-called standard or uniform codes. Some of these organizations have standing committees for the purpose of preparing revisions in the light of technical developments. Such revisions are then incorporated periodically in new editions of the codes. Other groups also issue codes but do not have standing committees for periodic revisions.

The growth of this code standardization activity has brought to light the numerous discrepancies and conflicts in existing practices and regulations. Most of the older codes include arbitrary rule of thumb provisions. Current thought is directed toward revising such regulations by replacing them with results of research studies and tests. This brings about desirable standardization in dimensions, areas, spacings, and other technical factors. An added advantage is found in the simplification as well as standardization of job training procedures for installation and service men.

With the standardization of technical factors, there becomes more evident the lack of uniform rules on matters relating to trade practices and policies. I refer to the question of who may be permitted to install and service gas appliances.

Some codes confine their rules solely to technical regulation of appliances and their installation. No

# McNAMAR MEETS THE BUYER'S EYE



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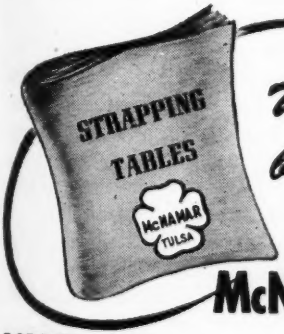


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reference is made to licenses, permits, qualifications of installers, and similar administrative questions. Others, particularly the usual types of plumbing codes, refer only to installation and repair by licensed plumbers, omitting any reference to installation by gas appliance dealers.

A very few codes recognize the classification of gas fitter as an individual who installs, repairs, and services gas piping and gas appliances. As an example of a new development, the city of Los Angeles recently adopted an ordinance establishing the classifications of warm air heating contractor and journeyman warm air heating installer.

**May Reclassify Servicemen**

Other problems which have arisen in the past, and which will become more pressing in the near future, are those relating to the qualification and classification of men who service electrical controls on gas appliances, and those who install and service gas-fired air conditioning equipment. Since most of the present regulations do not provide for the latest technical developments in gas appliances, it may be theoretically necessary to qualify a gas company service man as a plumber, electrician, heating installer, and refrigerator repairman. Evidently, this situation needs further study and combined action by our industry if the installation and servicing of gas appliances are not to be weighted by burdensome handicaps.

They should be consulted for detailed current provisions. Subjects which should be given most attention in the future are mentioned below because their regulation is apparently not well understood either within or outside of the gas industry.

*Range Connectors:* The adoption of very close fitting cabinet construction in kitchens brought about the introduction of flexible metal gas range connectors. These connectors have factory applied union connections at each end and are installed with a shut-off valve between the house piping and the connector. They are of bellows-type construction, the metal being brass, bronze, or steel. Without the use of such a flexible connector it is very difficult to make a safe gas-tight piping connection using only iron piping. Yet, few codes now provide for other than a solid pipe connection.

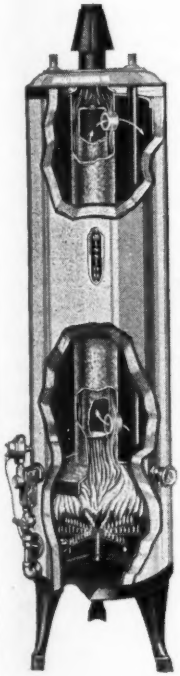
*Flush-to-Wall Ranges:* With respect to gas ranges, the introduction of flush-to-wall models requires an understanding of their correct installation. Spacing from walls and sides should conform to the type of range and the specifications of the A.G.A. Installation Requirements for Gas Appliances.

*Kitchen Ventilation:* The requirement of mandatory venting of the range oven should be re-examined. Studies of the ventilated gas kitchen will bring about changes in appliance installation, and the ventilation of kitchens which require new techniques and regulations.

In West Coast areas, it is often customary to install the water heater in (or adjacent to) the kitchen.

# MISSION ENGINEERED

## More Hot Water Per Minute *At Less Cost*



The inner tank circulation feature★ of Mission Senior exposes over double the normal tank area to heat absorption. Ordinary heaters offer but 3½ sq. ft. of heating surface to direct heat action.

But with Mission Senior the full effect of the Bunsen Burner heat is absorbed by 8¼ sq. ft. of metal in direct contact with water (the combined surface area of the inner and outer tanks exposed to direct heat).

This plus value of 5 extra sq. ft. of heating surface in Mission Senior operates to the user's advantage every minute burner is on.

★*An exclusive feature with Mission Water Heaters.*

**Mission Appliance Corporation**

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With the introduction of mechanical ventilation in a closed kitchen, a downdraft condition in the water heater vent might be created. This subject requires further study.

*Venting of Gas Water Heaters:* The gas water heater is a well standardized appliance. Yet, it is an open question whether the water heater vent should be interconnected with any other vent, say that of the furnace. Recent studies of the multiple venting of several water heaters show that the vent requirements of such an installation are apparently quite different from those of a multiple vent serving a number of gas furnaces.

*Air Supply:* One of the most neglected subjects is that of providing a permanent and adequate air supply for combustion and ventilation. This is particularly true of furnace installations. The source of combustion air should not be subject to accidental interruption or curtailment by the users of the furnace.

Neither should it be possible to adversely affect the flow of circulating air so as to bring about either a fire hazard or mixing with flue gas.

*Accessibility:* More attention should be directed to accessibility of appliances. Installation costs go up rapidly as appliances are built in to a greater degree. When the need for repairs or service adjustment arises, lack of accessibility causes unnecessary expense.

Associations of public officials, in general, are quite receptive to suggestions for improvement in local codes. All requests for assistance should be most carefully considered and answered. In preparing drafts of suggested revisions or additions, a balanced view of the situation should be taken. Regulations should neither be unduly restrictive to the sale and installation of gas appliances nor should such essential matters as safety of construction, installation, and operation be neglected. This can be accomplished by consultations between operating and sales departments so that the viewpoint and responsibility of both groups will be represented.

Due weight should be given to the problems of gas appliance dealers and their position as an essential element of our industry. No provisions should be considered which would arbitrarily restrict the installation of appliances to any one trade or group. Any individual or firm which can qualify by complying with reasonable ordinance provisions should be granted the privilege of engaging in all phases of the gas appliance business.

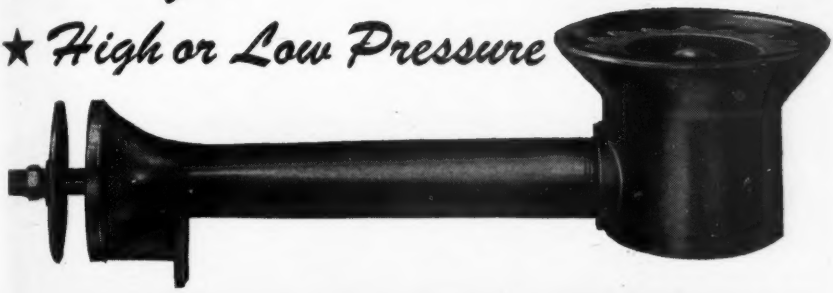
All code or ordinance subjects which lend themselves to research and test should be regulated in accordance with test results.

Close coordination should be maintained between gas company departments responsible for sales, operations and service. Developments in gas utilization research are numerous and proceeding rapidly. Marked changes will result in installation and servicing practices. Acquaintance with coming developments will permit advance planning, so that codes, practices and viewpoints will be in good agreement.

# SPREAD HEAD *Burners*

★ *3 Sizes*

★ *High or Low Pressure*



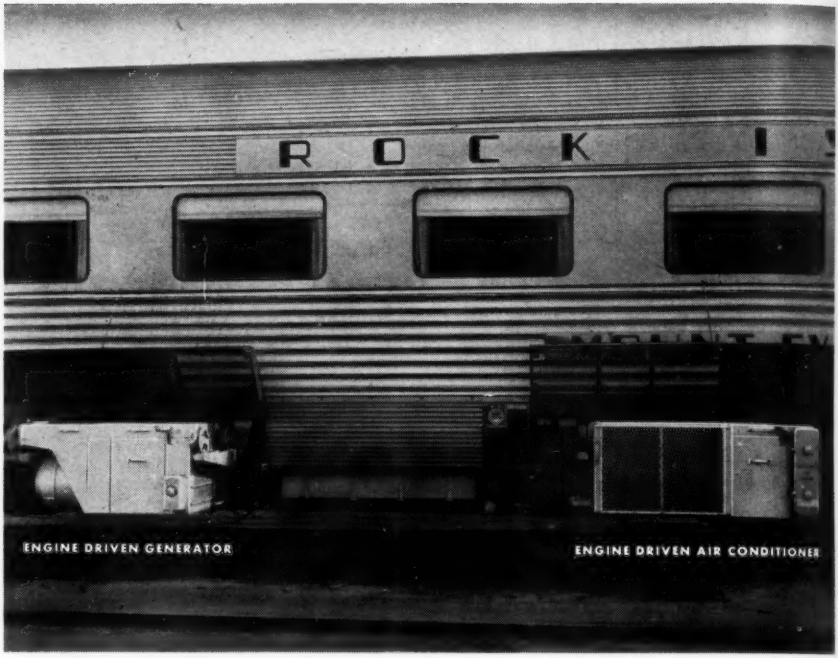
These vertically fired spread head burners were designed to operate on either high or low pressure gas. They provide a spreading type flame and are particularly advantageous in low fire boxes. They are recommended for rapid cooking burners, for heating glue pots, small vats, steam tables, water heaters, Chinese cooking pots, asphalt kettles, small boilers and medium size furnaces. Write us for more detailed information.

**RANSOME COMPANY**

***Designing and Constructing Engineers***

**4030 HOLLIS STREET · EMERYVILLE, CALIFORNIA**

*Ransome*




# RAILROADING WITH L.P.G. and ENSIGN

Here is another application of Ensign carburetion — two Waukesha engine driven units on each car, one for generating and one for air-conditioning. Ensign was used on the first experimental car over ten years ago and is now the accepted standard.

Every hour of the day or night, rain or shine, thousands of engines equipped with Ensign carburetors are turning out electric power and clean, cool air for railway passenger comfort. Units are fully automatic, demanding unfailing starting and carburetor performance.

Rarely is an internal combustion engine equipped at the factory to operate on Butane-Propane (L.P.G.), or Natural Gas, but what Ensign carburetion is used. Manufacturers and leaders in engine design have come to rely on Ensign — Standard of the Industry.

ENSIGN CARBURETOR COMPANY

7010 SOUTH ALAMEDA ST, HUNTINGTON PARK, CALIF
P.O. BOX 229

BRANCH FACTORY 2330 WEST 58th STREET CHICAGO 36, ILLINOIS

"PIONEERS IN EFFICIENT CARBURETION" • ESTABLISHED 1911

# Sells 400,000 Gals. Monthly For Irrigation

By O. D. HALL

THE quiet chug of internal combustion B-P Gas engines operating irrigation pumps on the high plains of northwestern Texas surrounding Hereford is music to the ears of Lyle Blanton and Mack Bainum, partnership owners of the Blanton Butane Gas Co.

LYLE BLANTON

These pumps, more than 200 of them, individually owned and operated in wells by farmers, ranchers and stockmen, are bringing the spring and summer loads of the company to more than 400,000 gallons in some months.

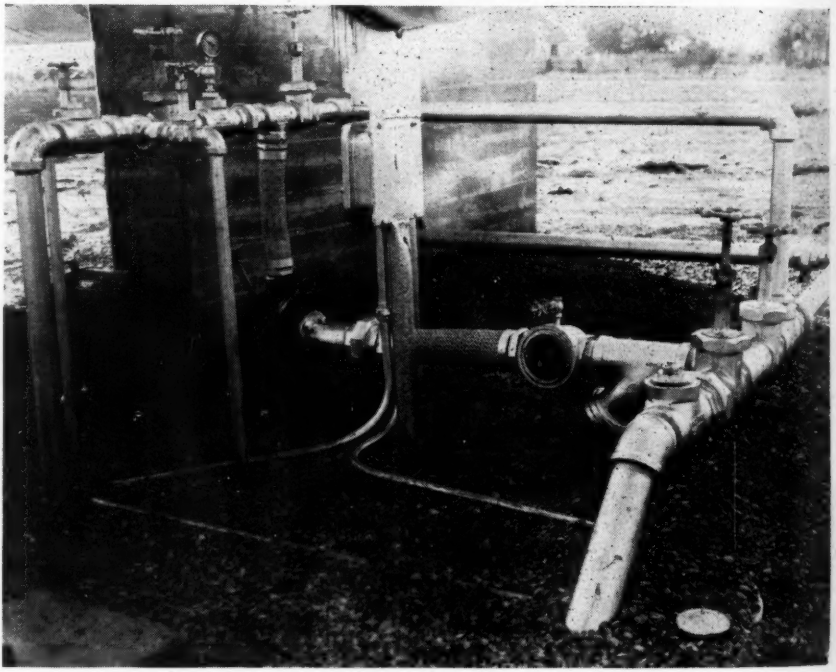
The water lies at convenient pumping levels beneath vast areas formerly devoted largely to grazing thousands of head of cattle.

At the time these men started their business at Hereford in 1939, there were only 15 irrigation wells in their territory. But they saw the possibilities of lifting the water economically and efficiently to the surface with B-P Gas and went to work selling the idea to the farmers and ranchmen.

Feeling the need for further expansion, the firm recently construct-

View of loading and unloading island. Loading area at right; unloading, at left.

**The two 18,000-gal. storage tanks of the Blanton Butane Co., at Hereford, Texas.**



**Pump area, showing pump and piping equipment.**

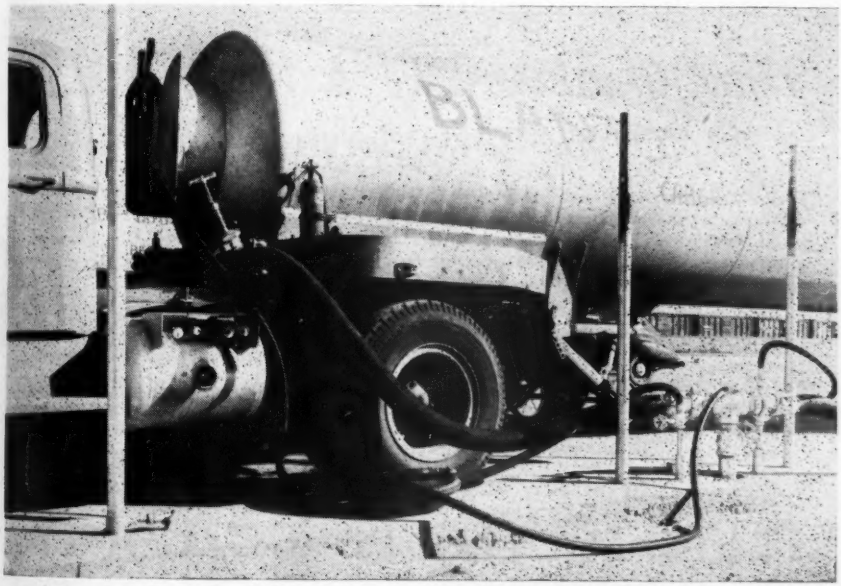
ed a 12,000-gallon storage plant at Friona, Texas, 22 miles southwest of Hereford. There, too, irrigation and the agricultural demands, will supply the bulk of their business and keep the summer loads up to high peaks. This winter, even when irrigation needs are reduced, the company expects to deliver 150,000 gallons of butane and propane a month to its customers.

For a time the company operated but one delivery truck and two small storage plants at Hereford. As the gasoline plant at Whitedeer, Texas, was 90 miles from its storage tanks, the firm found it necessary to add a transport to the truck equipment. Also added was a bottle filling plant to serve customers who used bottles.

At this stage the firm made a technical study of butane carburetion, secured Ensign carburetor distribution and went to work selling the farmers of the territory on B-P Gas fuel for their engines. They backed these sales by making proper installations and giving dependable service.

Growing demands soon made it necessary to purchase two more transports and another bobtail, making five pieces of rolling stock. At the beginning of this summer the firm added two more trucks to its fleet, now having seven in operation.

When in 1944, summer demands rose to better than 200,000 gallons a month, mostly for irrigation purposes, the Blanton company imme-



**Unloading a transport at the Blanton plant.**

diately began plans for a large bulk storage plant on the eastern outskirts of Hereford. A site along the main highway was secured and two 18,000 gallon Chicago Bridge and Iron Co., 200 lb., working pressure storage tanks were installed.

### Designed for Fast Service

The pump and pipe layout of this plant, designed and installed by Corken's LP-Gas equipment department, Oklahoma City, permits fast service at the plant. One or two transports may be unloading and two bobtails can be loading at one and the same time. It is possible to unload transports at a rate of 80 GPM and to load the 1200-gallon bobtails in from 10 to 12 minutes.

The transport unloading header connects to the transport unloading riser through 3-inch propane hose. The transport and storage tanks are equalized through 1-inch connections. The delivery trucks load through 2-inch hose and are likewise equalized through 1-inch connections.

The pump is a 2½-in. x 2-in. turbine type powered by a 5 HP, 3 phase, Class "1," Group "D," explosion proof, electric motor. The first month this equipment was put into operation it handled 317,000 gallons of liquid at an electrical cost of $14.61.

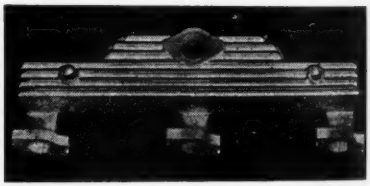
The liquid moving system for the new 12,000-gallon storage plant at Friona, Texas, also was designed and furnished by Corken's of Oklahoma City. With the 3 HP transfer


# *Mr. Dealer* TRY A MANIFOLD

## *On Your Own Service Truck*

**Prove to your own satisfaction that a specially designed *Bu-Power* Manifold puts power and economy into a butane converted truck. Here are some of the reasons why:**

1. 60% LOWER OPERATING TEMPERATURES —maintained by the presence of seven cooling fins, extending the full length of aluminum manifold.
2. 73% MORE VOLUME (than stock manifold)—permits the use of larger venturi.
3. PERFECT DISTRIBUTION to all cylinders means a smoother operating engine.
4. EASILY INSTALLED — every manifold has three vacuum brake take-offs.



5. STEEL EXHAUST "BLOCK-OFF" PLATES FURNISHED ON REQUEST — Cutting or welding exhaust manifold eliminated.

**Our dealers, who "Bu-Power" installations, find their customers enjoy BETTER PERFORMANCE—INCREASED MILEAGE.**

## ELLIS MANIFOLD COMPANY

1708 S. Soto Street ★ Phone AN 1-3463 ★ Los Angeles 23, California

# A HOT TIP FOR COLD WEATHER

## GET SET NOW WITH

# THE IMPROVED ALGAS

## Vaporator

Model 1300
Make installations before cold weather sets in. Place orders now for prompt delivery.

### CHECK THESE FEATURES:

- Models available with capacities from 13 gallons to 52 gallons per hour LPG.
- Stainless steel non-stick, non-freeze control valve pistons.
- Molded valve seats.
- Sensitive automatic valve control which cuts burner off or on . . . maintains constant sphere pressure within one-pound range.
- New, improved burner of larger capacity which will not backfire.
- Installation above or below ground with tanks of any size.

*For details write for Bulletin V-1*

1109 Santa Avenue
Los Angeles 21, California

ALGAS

**AMERICAN LIQUID GAS**
**LOS ANGELES CORPORATION CHICAGO**

pump at that plant, the 1200-gallon bobtails are loaded in 12 minutes.

All drivers for the Blanton firm are World War II veterans and it is the aim of Mr. Bainum, who will take management of the new bulk plant at Friona, to employ only such veterans for operation there.

That he may better cover the vast reaches of Texas, and facilitate trips to large markets, Mr. Blanton owns and flys a two-place airplane.

The Blanton company also owns and operates an expanding B-P Gas appliance and equipment business in its territory.

Mr. Blanton is encouraging the use of B-P Gas fuel on new tractors by working with all the tractor dealers in his territory and even suggesting that such machines come out of the factory equipped with B-P Gas carburetion and fuel tanks. This will make it possible for customers to purchase such equipment at the lowest possible cost, saving the expense and trouble of converting from other fuels after the tractor is in the field. Mr. Bainum and Mr. Blanton attribute their success to constant attention, 12 hours a day, to the present and anticipated needs of their customers and to operating their business on a cooperative rather than a competitive basis.

Mr. Blanton is the newly elected president of the Texas Butane Dealers Association.

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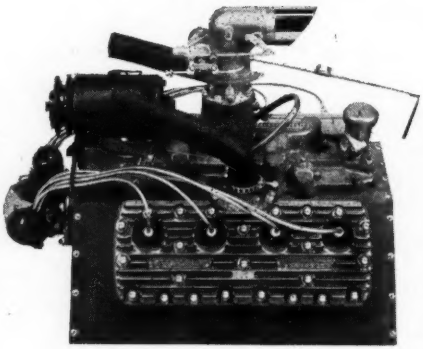
**TATTERSFIELD**

**Butane-Propane Manifolds**
**V-8 Hi-Compression Heads**



**Illustrated is a V-8 butane-propane manifold with high compression cylinder heads for Ford and Mercury trucks and passenger cars. The manifold and heads used together give greater power, amazing speed and sensational economy.**

**IMMEDIATE DELIVERY**

**Electric and Carburetor Engineering Co.**

**2323 E. 8th St.** ***"Pioneers of the Butane Industry"*** **Los Angeles 21, Calif.**

THROUGHOUT---
THE L P-GAS INDUSTRY
---wherever LEAK-PROOF SECURITY IS A MUST

TiteSeal

TiteSeal

The Indestructible gasket and joint-sealing compound is especially compounded for use on butane, propane and other L P gases, on installations above and below the ground, and wherever the L P industry must have absolute LEAK-PROOF SECURITY.

- TiteSeal IS HEAT AND COLD PROOF
- TiteSeal IS VIBRATION AND PRESSURE PROOF
- TiteSeal IS IMPERVIOUS TO GASES, OIL, WATER, ACIDS, STEAM AND PRACTICALLY ALL LIQUIDS.
- TiteSeal IS ABSOLUTELY LEAK-PROOF

THE L P-GAS INDUSTRY IS TITE-SEAL BOUND

SOLDER SEAL TiteSeal PRODUCT

RADIATOR SPECIALTY COMPANY
CHARLOTTE 1, NORTH CAROLINA
○ RADIATOR SPECIALTY COMPANY OF CANADA, LTD., TORONTO
○ GOLDEN STATE RUBBER MILLS, LOS ANGELES, CALIFORNIA

# *Gas Appliances:*
# From Sideline to Dealership

By FRANK HOAD
Co-Owner, Hoad-Powers Ruralgas Service
St. Joseph, Missouri

IT may seem like a broad jump from music merchandising to gas appliances, but it's a story of a sideline that under careful direction grew into a profitable business that called for its own sales building.

I believe that the completely gas-equipped farm home offers one of the greatest potential outlets for years to come for the gas appliance dealer.

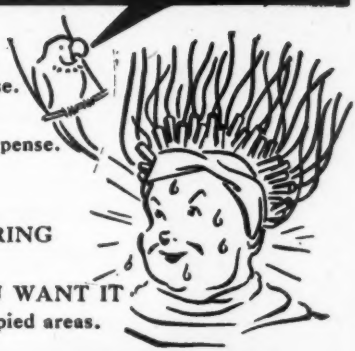
With better farm-to-market roads in the offing in the entire country, and the desire of modern farmers to buy the merchandise necessary to make their method of living more convenient and more comfortable, it opens a potential gas appliance outlet of great proportions.

Since we became "Ruralgas" dealers in our trade territory in the forepart of 1945, the possibilities of the farm market have become very broad, and through a carefully planned advertising campaign we expect excellent results.

The Ruralgas dealership was offered to the Judkins-Hoad Music Co. before the Judkins interest was purchased by Verlin F. Powers, and became a partnership under the

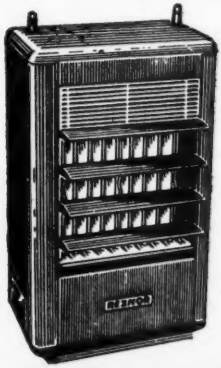
**The store's prominent corner brings in sidewalk trade and permits window display advertising to heavy passing traffic.**

"Yes. *Heat where you want it—*"



1. CLEAN HEAT
   Saves cleaning expense.
2. GAS FIRED
   Saves maintenance expense.
3. SUSPENDED
   Saves floor space
4. INTERMITTENT FIRING
   Saves fuel.
5. HEAT WHERE YOU WANT IT
   Saves heating unoccupied areas.

*Propeller fan and blower types.*



REZNOR

*Gas unit heaters*

★

*Propeller fan and blower types. Nine sizes of each*

**REZNOR MANUFACTURING CO.**

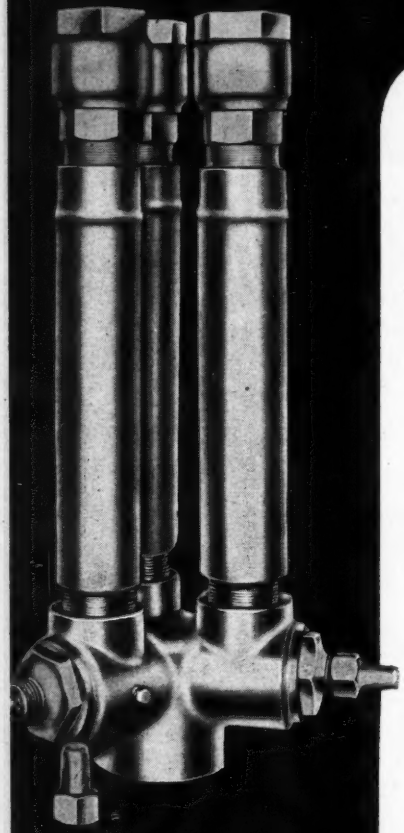
*Since 1888*

**MERCER, PENNA.**

NO BOILERS • NO STEAM LINES
NO FUEL STORAGE • NO FIRE TENDING

# *Complete Protection*

# AT ALL TIMES



| R-709 | R-710 | R-711 |
|---|---|---|
| 2-Port | 3-Port | 4-Port |
| 2" I.P.S. | 3" I.P.S. | 4" I.P.S. |
| female inlet | female inlet | female inlet |

**Are your large storage tanks adequately protected? The Roney Multiple Relief Valve Manifold is so constructed that "Complete Protection" is assured at all times to large butane or propane storage tanks. It is a compact type manifold which permits the grouping of several relief valves in a single connection, thus making it possible to remove one or more valves for repairs or replacement without hazard and without emptying tank.**

## CONSTRUCTION DETAILS

**This manifold is designed for use with a Roney No. R-2817 Relief Valve, having an effective area of 2.2 sq. in. in either 2, 3 or 4 valve combinations, thus giving a total area of 2.2, 4.4, 6.6, or 8.8 sq. in. with a single tank connection. The presence of ¼" I.P.S. female openings into each valve chamber permits the use of air or carbon dioxide gas pressure in retesting. Fewer openings in the tank are necessary. Valve stems are packed with hydrocarbon resisting packing. Independent shutoff valves to each relief valve compartment are interlocked so that only one valve may be closed at a time.**

For Complete Line of Butane-Propane Equipment
LOOK TO RONEY

**L. C. RONEY INC.**
511 S. REDONDO BLVD. ★ INGLEWOOD, CALIF.

**A carload of tanks for Ruralgas is joyfully received.**

name of Hoad-Powers Ruralgas Service. The Judkins-Hoad Co. was the area dealer for the Servel Electrolux gas refrigerators. This gave us a certain amount of rural following.

The new dealership presented the problem of finding a suitable store with adequate floor space and yet conveniently located. Eventually an advantageously located building was found which had a sizeable amount of automobile traffic as well as "sidewalk traffic." The building had excellent window display facilities and required an outlay of about $2000 to make it a first rate sales outlet.

The Ruralgas plan includes an aboveground propane gas system for country homes. The gas is metered to the houses and the customer pays only for the gas consumed. An office record is maintained of each customer's gas consumption and this tells us when the customer's gas supply needs refilling. The meter is read periodically by the customer, and reported to us on cards provided for this purpose. When the records indicate that a tank needs refilling, the tank truck is dispatched to render the service. This eliminates the necessity of the customer notifying us that his gas supply is low.

### How Rates Are Set

Since the gas consumption is charged on a scaled rate, the more gas the customer uses, the less he pays per cubic foot above a certain amount. Consequently, it is actually less expensive than if several different fuels were used.

The Ruralgas dealership provides us with Roper gas ranges, Servel Electrolux refrigerators, Coleman

floor furnaces and Security automatic gas water heaters, thus enabling us to offer our customers completely gas-equipped homes.

At present, the rural trade forms about 90% of our business and because of shortages, we are several months behind on filling our orders, with a backlog of $20,000 worth of orders awaiting the availability of appliances.

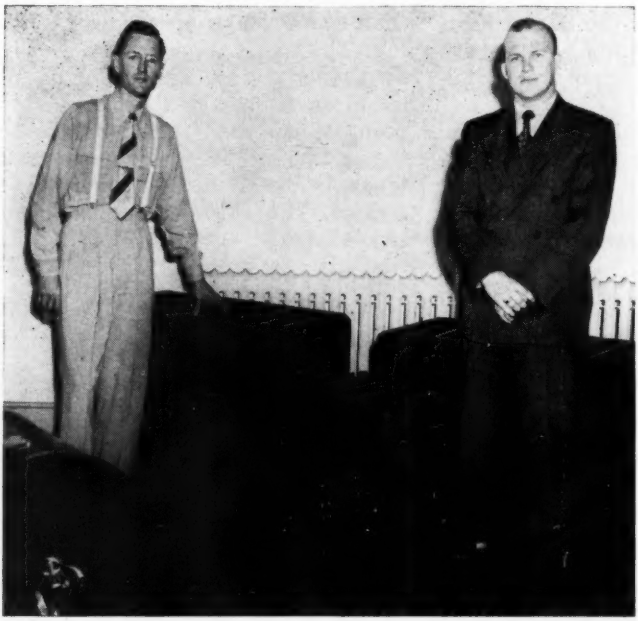
Shortly after we opened our present store, we launched a direct mail advertising campaign to introduce our new store to prospective customers.

Our gas appliances and services were explained briefly on a business reply card and sent to every box holder in Buchanan county. The results were very gratifying.

When the cards were returned to us, we followed them up with personal calls and gave detailed explanations of our Ruralgas service and the appliances we carried in stock.

To the customer who expressed an interest by returning the card but did not place an order after the personal calls, we sent followup letters, inviting them to come in and inspect the merchandise we discussed. That plan gave us a vigorous boost in our new undertaking and showed us the wide possibilities of a broad advertising campaign when the supply of gas appliances is more equal to the demand.

Our future plans call for a more consistent newspaper advertising campaign in the papers in our trade territory; direct mail advertising



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**FRANK HOAD (left) and VERLIN F. POWERS BESIDE A NEW SHIPMENT OF GAS HEATERS**

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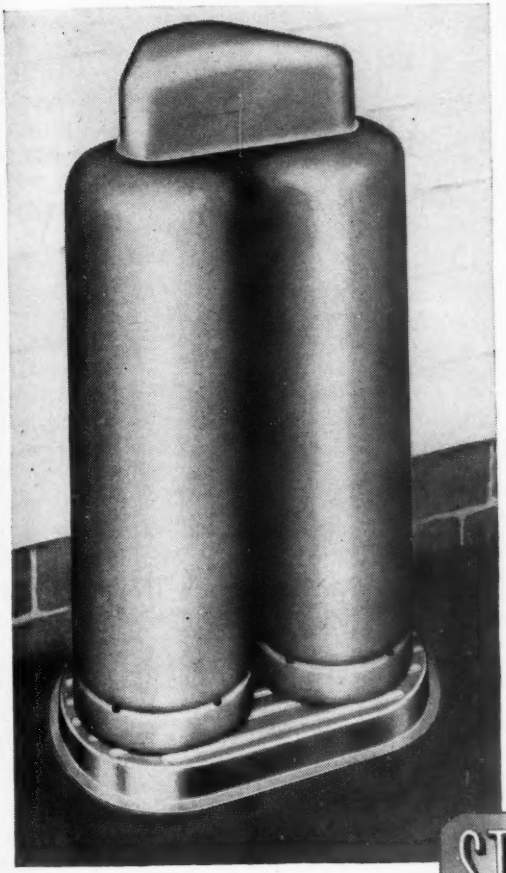
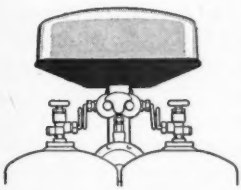


# Presenting the D-1

*NEWEST BOTTLED GAS HOUSING...*

*by*

**STAMPINGS**
INCORPORATED



Now, a *better* housing . . . with *new* beauty . . . *more* features and *greater* merchandising advantages. Here is a *one piece* housing—will not rust—is *easy* and *fast* to service. The neat appearance is definitely customer pleasing. Write for complete details to

STAMPINGS, INC., DAVENPORT, IA.

**Copy of office records maintained to provide periodic check on farmer-consumer gas consumption.**

Name .....
Mailing Address .....
Exact Location .....
Date of Installation.....
Size of Tank Installed.....
Appliances Installed .....
Additional Appliances Owned.....
Later Installations { Appliance ..... Date Installed .....
Year 19....

Jan.

Meter Reading—Decitherms .....
Consumption—Decitherms .....
Charge .....
Sales Tax .....
Other Charges .....
Total Amount Due.....
Date Paid .....
Gallons Left in Tank.....
Date Filled .....
Gallons Added .....
Total in Tank.....

features and strategic billboard displays on the main farm-to-market roads in our territory.

Contacts with architects and contractors have also proven advantageous in building up our business. We are working closely with the contractors who are building new homes in St. Joseph. These houses will be gas-equipped, with the accent on gas furnaces. With the building and remodeling activities that are taking place as rapidly as materials are available, it opens another field for gas appliances.

St. Joseph is the home of one of the principal Midwest livestock markets and in the midst of a rich agricultural area. For that reason, our plans and our advertising campaign will be pointed for the rural market. In the meantime our present advertising is comparatively small, serving to keep our name before the potential customer's eyes, to familiarize him with the name "Hoad-Powers, Ruralgas Service."

With the proposed plans for better farm-to-market roads in our territory, the farm home will be brought into even closer contact with the cities nearby. As a result, the farmer is open to the sales ideas that will bring him the conveniences and luxuries that his city cousin enjoys. It opens a broad horizon for the market of completely gas-equipped farm homes.

## Motor Coach Trailers Must Use ICC Cylinders

Frank Fetherston, vice president of the technical division of the Liquefied Petroleum Gas Association, reports that the ICC has extended its jurisdiction to include intra-state movement of LP-Gas.

"With this as a fact," states Mr. Fetherston, "whether right or wrong, any container installed in motor coach trailers should be of ICC code.

"API-ASME vessels do not qualify, although some of these, by report, have been put to this use.

"LPGA has reported these facts to the Trailer Coach Manufacturers Association who has agreed to bulletin the matter to their members.

"In addition thereto, LPGA has requested representation on the NBFU committee which has in prospect the writing of a trailer installation regulation."

# PROOF

## of *Air Borne* ECONOMY in BUTANE-PROPANE CARBURETION

**E. W. RUBER, TRANSPORTATION, CHOSE *Air Borne* CARBURETION for his TRUCKS**

The monster tractor-trailer pictured above makes an average of three round trips weekly between Wilmington, California, and Oakland. It pulls over the Ridge Route and, fully loaded, hauls a load of 78,000 pounds.

Its 328 horsepower Hall-Scott motor is equipped with an *Air Borne* carburetion unit. Mr. Ruber reports a saving of 11% in fuel consumption on a 940 mile test run with the *Air Borne* butane-propane unit.

Lew W. Moran, the smiling six-footer who pilots this huge freighter, reports excellent results in starting and idling, as well as power.

**PROVE *Air Borne* CARBURETION TO YOUR OWN SATISFACTION.**
**WRITE FOR FURTHER INFORMATION.**

**KOHLER CONVERSION KITS AVAILABLE IMMEDIATELY**

*Air Borne Products Company*

1829 East Randolph Street, Los Angeles 1, Calif. • LUcas 0185

# Ransome Dealer Meeting Held

A MEETING of dealers of liquefied petroleum gas who represent Ransome Co., Emeryville, Calif., and Standard Oil Co., San Francisco, was held recently at Hotel Leamington, Oakland, Calif.

JOHN LICATA

Those present were: Charles Williams, Sheldon Oil Co., Suisun; John McPhail, of the McPhail Fuel Co., San Rafael; Ralph Small, Small Butane Co., Petaluma; Jack Fine, City Ice & Fuel Co., Modesto; E. C. McEneany and F. A. McEneany, Diablo Co., Walnut Creek; Jack Griggs, Jack Griggs, Inc., Exeter; Clyde Munger, City Butane Co., Stockton; Brad Legge, Glenbrook Gas Co., Grass Valley; Lewis Marks, San Luis Butane Distributors, Atascadero; J. A. McGlinchy, Hayward Butane Co., Hayward; and E. W. Pierce, Mercer-Fraser Co., Eureka.

E. C. McEneany, Diablo Co., presided at the meeting. In the morning the group was addressed by representatives of various manufacturers of liquefied petroleum gas products, insurance companies and the Bank of America.

The business meeting was held in the afternoon. John Licata, in charge of the Special Products department of the Standard Oil Co., discussed problems of the suppliers of LP-Gas.

Tallant Ransome, vice president of LPGA and Pacific Coast director of that organization, presented the new plans of the LPGA to the group and urged that the dealers rejoin that organization.

The next meeting of the group will be held in October. The subject to be explored will be: The feasibility of joining with other groups in California in forming a strong State of California association.

## Selwyn Turner Named to Represent LPGA on API

President Charles O. Russell of the Liquefied Petroleum Gas Association, has appointed Selwyn Turner, of the National Butane Co. of Alabama, Inc., Mobile, Ala., as the representative of the Association to the Agricultural Development Committee of the American Petroleum Institute.

Mr. Turner is strategically located to observe the application of flame-cultivation to the cotton fields of the South, according to Mr. Russell, which is probably destined to be the first extensive use of this new operation, and will aid in the promotion of other agricultural uses of LP-Gas.

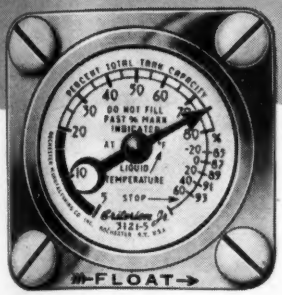
## Cost-Plus Basis Materials Priced on Delivery Dates

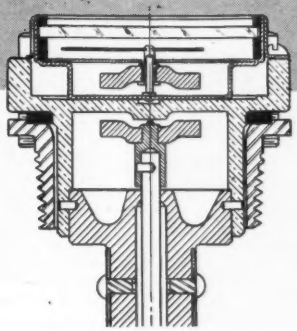
Manufacturers, converters and wholesalers selling products, priced on a cost-plus basis, which were made from materials bought during the period of no-price control may now base their prices on the ceiling prices of the basic goods at the time of delivery of the finished product, instead of the date of sale, the Office of Price Administration states.

The action, effective Aug. 19, is an amendment to the supplementary order on "How Sellers are to Treat Costs Incurred During the Period July 1 to July 25, 1946."

# AS ACCURATE AS A COMPASS

## ...and just as Simple!



Rochester's 3120 gauge fits Bastian-Blessing head, No. 2465 or Weatherhead manifold No. 900 as well as pipe thread risers, 1½" or 2".

Rochester's 3121 gauge fits Bastian-Blessing Multi-Valve head, No. 2418

**W**ith Rochester LPG gauges on your tanks or I.C.C. cylinders, you always know what the liquid level is exactly. Accuracy is built into these instruments at every step in the production line. From minutest part to the forged casing, Rochester "Criterion" Gauges are precision tooled, stamped, assembled, and inspected.

The gauge head is separated from the tank assembly by a forged plate. Impulses are transmitted by two permanent, non-electric magnets, one on the center shaft below the plate, the other in the dial indicator assembly. See Fig. 1 above. This means accurate transmittal plus *safety,* just as important. There is *no* reason for taking changes with other devices when Rochester solves the indicator problem so simply, so safely, so permanently so, accurately.

**ROCHESTER MANUFACTURING CO., INC.**
**17 ROCKWOOD STREET ROCHESTER 10, N. Y.**

Rochester
Guaranteed Accuracy

# ENGINEERED INSTRUMENTS

LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

## Green's Fuel Dealers Hold Meeting in Greenville, S. C.

Dealers operating under franchises from Green's Fuel, Inc., Sarasota, Fla., met in Greenville, S. C., Aug. 23-24 to talk shop and to hear the latest news regarding equipment and appliance deliveries from manufacturers' representatives.

K. H. KOACH

Distributors from the states of North Carolina, South Carolina and Georgia attended the meeting. Kenneth H. Koach, vice president and general manager of Green's Fuel, presided. He was assisted by Harry Price; Taylor Green, vice president, and William J. Burkett, chief engineer.

In attendance were a dozen manufacturers' representatives and tank suppliers.

## Subsistence Payments Must Not Lower Established Wages

Employers in California, Arizona, Nevada and the Territory of Hawaii have been warned by Paul L. Kleinsorge, chairman of the Tenth Regional Wage Stabilization Board, that government subsistence payments under the G. I. Bill of Rights to veterans in trainee or apprentice programs cannot be used to lower established apprenticeship or trainee wages in violations of the law against unauthorized wage decreases.

"The WSB has defined wages to include only payments which are made by an employer to an employee for services," Mr. Kleinsorge said.

Employers who fail to comply with the regulations in establishing on the job trainee programs of veteran trainees will be subject to enforcement penalties in the form of income tax disallowances. Where there is any doubt on the part of the employer as to whether or not he should file, Mr. Kleinsorge suggested that a filing be made in order to avoid any payment which might be interpreted as a violation.

Applications for approval may be filed at the nearest Wage and Hour office of the U. S. Department of Labor where a copy of the Board's policy on veteran trainee and apprentice rates also may be secured.

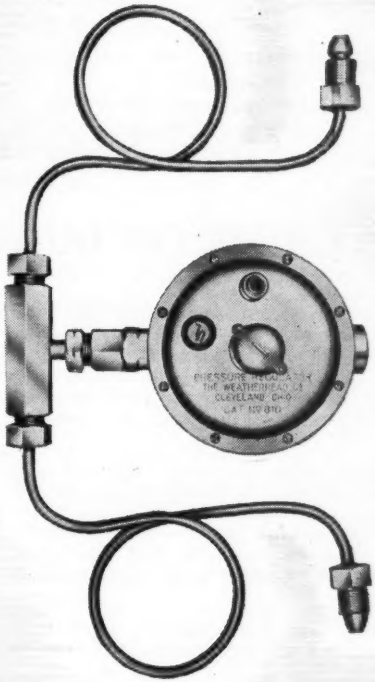
## LPGA Will Maintain Accident Record for LP-Gas Industry

Through a letter to all members of the Liquefied Petroleum Gas Association, F. R. Fetherston, vice president technical division, has requested that his office be sent all newspaper or other published accounts of accidents that involve LP-Gas in any way. When sending in a report, the name and date of the paper from which the account is clipped should be included.

Mr. Fetherston stated that "Our industry has reached a stage of development where it seems desirable for some central agency to collect, compile, and analyze accident reports."

A useful and instructive summary of the data developed will be issued periodically to Association members, it to be compiled from the scrap book record of the accidents reported. "Such a record, on a national scale, will help the industry materially in its problems with insurance, as well as its relations with all other agencies who are concerned with safety," reports Mr. Fetherston.

# Double-Duty regulators for L.P. Gas Service



WE MANUFACTURE a complete line of Regulators, designed for use with storage vessels, single cylinders and dual cylinders. They may be used on either manual or automatic throw-over systems.

Regulator No. 810 illustrated here with dual cylinder hookup, is designed to handle loads up to 250 cubic feet per hour or more. It has 2 inlet nipples and settings for Type 1 or "Propane", with ⅛" inlet orifice set at an 11" delivery pressure. This setting is recommended for single stage propane service.

The second setting is for Type 2 or "Butane" with a 5/16" orifice set at an 11" delivery pressure. This setting is recommended for either Butane service or for second stage propane, and should be used in conjunction with an automatic manifold.

This versatile regulator is only one item in the complete line of L. P. Gas products manufactured by Weatherhead.

*Look Ahead with*

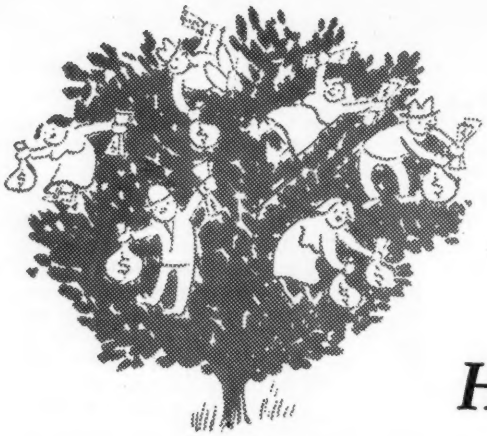
**Weatherhead**

The Weatherhead Co., Cleveland 8, Ohio

NEW YORK • DETROIT • CHICAGO • ST. LOUIS • ATLANTA • DALLAS • LOS ANGELES

**ATTENTION L. P. GAS ENGINEERS**

Weatherhead products include Multiple Heads, Regulators, Fittings, and Cylinder Valves. All Weatherhead LP-Gas items are acceptable for use with LP-Gas systems listed by the Underwriter's Laboratories.



# *How long*

# WILL CUSTOMERS GROW ON BUSHES?

**The way that ranges are being snapped up by the current surge of consumer demand has given most L.P.G. dealers the impression that "demand is here to stay."**

**Even with ten million new homes to be built and millions more of obsolescent ranges to be replaced, the day when consumer buying will return to normal is not too far off in the future.**

**The Welbilt gas range is ready for that kind of customer now. As the "World's Biggest Selling Popular Priced Gas Range," Welbilt is more than just an eye-full. It's the gas range with those extra cooking convenience features, built to a high quality product standard that fits right smack into the mass consumer budget price bracket that sells the fastest.**

**L.P.G. dealers know that consistent value is a *must* in any line that is to be counted on for maintained profits and faster turnover.**

**All Welbilt dealers will be enjoying the harvest long after customers stop growing on bushes!**

**WELBILT STOVE CO. INC.**
**Maspeth, L.I., N.Y.**
417 South Hill Street

Courtesy to Brokers

**MORE Welbilt Ranges WILL BE DELIVERED SOONER!**

## W. B. Wight Is President Georgia Butane Dealers Assn.

In the September issue of Butane-Propane News (Page 26) appeared a list of the officers of all of the state associations serving the liquefied petroleum gas industry.

Through error, it was stated that the president of the Georgia Butane Dealers Association was Hermann Paris. W. B. Wight, Consumers Gas Co., Albany, Ga., is the president of this association. Fred Rives, Automatic Gas Co., Columbus, Ga., is secretary-treasurer.

## Production Becoming Stabilized Says Government Official

With July output of basic industrial materials virtually at capacity levels, John D. Small, Administrator of Civilian Production, said Aug. 29 the time is nearing when industry again will be able to draw on full pipelines.

"The stop-and-go output of materials and parts which has been obstructing volume manufacturing has now been replaced by continuous, high-level production," Mr. Small commented in releasing his Monthly Report on Civilian Production for July. "That means that industry is within sight of full production of finished goods if industrial peace continues."

The score on consumers' durable goods in shown in Table 1.

## NBPA Begins Compilation Of Industry Trade Marks

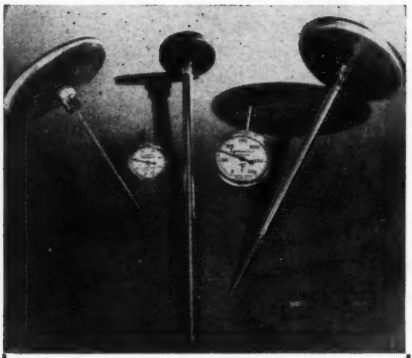
As a service to the LP-Gas industry, the National Butane-Propane Association has started compiling the trade names and trade marks used by dealers, distributors, manufacturers and suppliers. The success of the undertaking depends upon cooperation of everyone using special trade symbols.

The list will be made available to industry members and will aid in preventing duplication of names and marks.

All trade mark and trade name owners are requested to register with the association, whose address is 850 Builders Exchange Bldg., Minneapolis.

TABLE 1

| | *July* | *June* | *Prewar Monthly Rate* |
|---|---|---|---|
| Automobiles | 220,000 | 142,000 | 312,942 |
| Trucks | 93,000 | 59,000 | 86,840 |
| Passenger tires | 5,100,000 | 5,200,000 | 4,200,000 |
| Truck and bus tires | 1,100,000 | 1,200,000 | 1,000,000 |
| Refrigerators | 220,000 | 210,000 | 309,000 |
| Washing machines | 187,000 | 194,000 | 158,000 |
| Radios | 1,329,000 | 1,378,000 | 1,100,000 |
| Sewing machines | 35,000 | 27,000 | 67,000 |
| Vacuum cleaners | 197,000 | 180,000 | 156,000 |
| Gas ranges | 127,000 | 141,000 | 125,000 |
| Electric ranges | 57,000 | 46,000 | 47,000 |
| Electric irons | 502,000 | 559,000 | 380,000 |



*Equipoise*

**PRECISION**

**Bimetallic Dial Thermometers**

for every industrial and laboratory use

Widely used on Butane and Propane storage tanks. Also in oil refineries and gasoline plants.

Many standard ranges are available between the limits of minus 90° F. and 1000° F.

- Easy to Read Dial
- Instantaneous Response
- Only One Moving Part.
- High Over-range Protection
- Individually and Permanently Calibrated
- No Pinions, Gears or Linkages
- Calibration Unaffected by Vibration
- Durable Stainless Case, Connection Nut & Stem
- Available with Tempered, Non-Breakable Crystals
- Available in 2, 3 & 6 inch Dial Sizes
- Heavy Duty Sockets are Standard
- Low Cost—No Maintenance

**EQUIPOISE CONTROLS**

Dept. BP, 100 Stevens Ave.

MT. VERNON NEW YORK

## Seven San Joaquin Valley (Cal.) Dealers Consolidate Operations

The United Liquid Gas Co. is the name of a new corporation that has been formed to carry on the joint operations of seven retail liquefied petroleum gas dealers in the San Joaquin Valley of California.

Into this organization were thrown the physical assets of the following companies, with offices or bulk plants as indicated:

**Hanford Butane Co.—Hanford, Kingsburg.**

**Hiebert Butane Service—Tulare, Pixley, Delano, Dinuba.**

**Rural Butane Service—Fresno, Madera.**

**C. S. Merriman Co.—Fresno, Clovis.**

**Bragg Butane Supply Co.—Fresno, Caruthers, Kerman, Reedley.**

**Egbert Butane Co.—Madera, Chowchilla.**

**Cavin Butane Co.—Madera, Chowchilla, Selma, Kingsburg, Riverdale.**

The headquarters office will be in Fresno with G. H. Bragg in charge.

The consolidation of these firms will eliminate the necessity of duplicating many services which have occurred in the past and will permit the elimination of considerable delivery trucks and bulk storage facilities. The territory served by the various companies will now be covered without duplication of effort.

### Big Field For Tractors

For many years the San Joaquin Valley has been a fertile field for distribution of liquefied petroleum gas. It has been estimated that there are 25,000 tractors, alone, which operate on butane and which are owned by the farmers in the highly intensified agricultural district. In addition to the application on trucks and tractors, butane and propane are used for irrigation pumping and for the usual domestic purposes by the farmers and small town residents.

# THE BOTTLED GAS MANUAL

**A field guide and text book for dealers, salesmen and servicemen**

## 352 Pages of Answers to Every Day Questions About Liquefied Gases, Appliances and Equipment

***These Are the Chapter Headings***

What Is Propane?
The Behavior of Gases
Heat and Temperature
What Goes On Within a Propane Cylinder?
The Simple Regulator
Regulator Manifolds
Regulations—Equipment Selection and Installation
LP-Gas Pipe Lines
Testing for Leaks and Adjusting Burners
Fundamentals of Thermostats
Pilots and Pilot Controls
Burner Design and Application
Appliance Conversions
Facts About Water and Water Heaters
Types of Water Heaters
Selecting and Installing the Water Heater
Competitive Fuels—Wood
Competitive Fuels—Coal
Competitive Fuels—Oil
Competitive Fuels—Electricity—Rates and Refrigeration
Competitive Fuels—Electricity—Cooking and Water Heating
Gas Lighting
Space Heating
The Tools of Our Profession

**We pay postage on orders accompanied by check or money order. In California add 10c for sales tax. In Canada add 40c for excise tax.**

## MAIL ORDER TODAY

BUTANE-PROPANE News, Publishers
1709 West 8th Street, Los Angeles 14, Calif.

SPECIAL OFFER
25% Discount on All Orders of 10 or More.

**$4.00** per copy

Gentlemen: Please send me.....copies of The Bottled Gas Manual for which I am enclosing check (or money order) for $.....

Name .....Position.....

Company.....

Address..... City and State.....

# New Products

## Carburetion Equipment

**Air Borne Products Co., 1829 Randolph St., Los Angeles 1.**

**Description:**

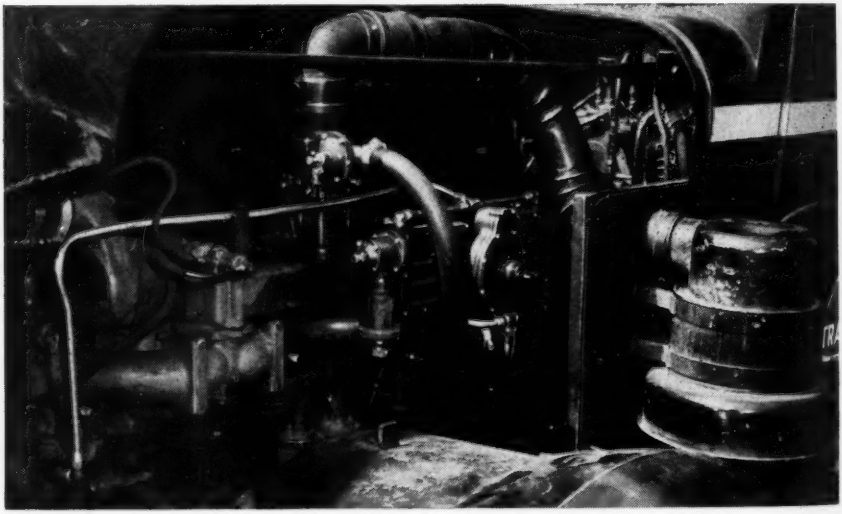
Air Borne manufactures three compact LP-Gas regulator and heat exchange assemblies of utmost simplicity, as well as carburetors, in a complete line capable of handling engines from 20 HP to 400 HP.

There is also a regulator for use in installations using vapor, such as the Kohler electric generating plants. This regulator is sold in a kit including bracket for mounting, all brass fittings, neoprene hose, load adjustment valve, and spud for carburetor.

The regulator-heat exchange assemblies for the larger motors are made in three sizes to accommodate engines of approximately 125 HP, 225 HP, and 400 HP. An assembly consists of a strainer, high pressure regulator (tank pressure to 6 lbs.), heat exchanger, and low pressure regulator. The same parts are used in each of the assemblies with the exception of heat exchanges and valve orifices. On the large model, a double heat exchange is used as illustrated on the Hall-Scott "400" Series engine.

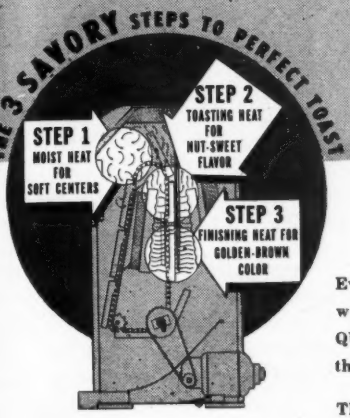
In supplying carburetion for any engine, a complete kit is furnished with everything under the hood included, hose, hose clamps, fittings, copper tubing etc.

Air Borne's carburetors are very simple in construction, with the least possible restrictions. The dry gas is metered into the air flow directly through orifices in the throat of the venturi tube. The venturi tubes are removable without taking the carbu-



**An Air Borne carburetor installation on a Hall-Scott "400" series heavy duty engine.**

# QUANTITY *and* QUALITY MUST GO TOGETHER


THE 3 SAVORY STEPS TO PERFECT TOAST
STEP 1
MOIST HEAT FOR SOFT CENTERS
STEP 2
TOASTING HEAT FOR NUT-SWEET FLAVOR
STEP 3
FINISHING HEAT FOR GOLDEN-BROWN COLOR

Every restaurant, hospital and institution is faced with the problem of QUANTITY production of QUALITY toast—and Savory LP gas toasters are the ONLY completely satisfactory solution.

That's why Savory Toasters are a quick selling item for LP GAS DEALERS. They carry a good merchandise profit, but, more important, they solve the toast problem, demonstrate the high quality production and low cost of operation of LP gas and frequently result in the installation of additional heavy-duty LP gas cooking equipment.

Savory is cooperating with LP gas dealers who are developing the profitable commercial cooking load.

◆

*Write for Details.*

*The new Savory Stainless Steel models for LP gas are the finest toasters ever produced for quantity production of quality toast. Made in models suitable for toasting bread, buns and sandwiches.*

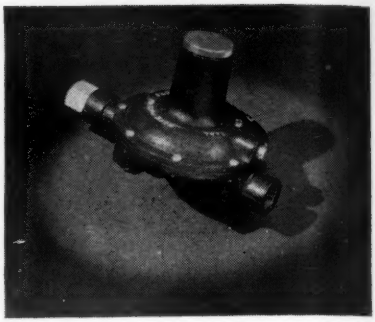
**Savory**
**EQUIPMENT, Inc.**
137 Pacific Street, Newark 5, N. J.
Sold by leading dealers everywhere.

retor off of the manifold. Economizers are furnished on most automotive installations, while constant load engines use a straight load adjustment.

Maintenance costs on the regulator assemblies are very low. A complete new low pressure valve assembly can be installed with a screw driver in 10 minutes, without removing the regulator from its mounting.

A great deal of thought has been given to keeping the number of moving parts to a minimum, and there are no valve guides to create friction and stick when dirty. The unit will work well under the most adverse conditions, state the manufacturers.

Combination gasoline butane-propane carburetors are available, and butane propane combined with natural gas for oil field use can now be had, also.

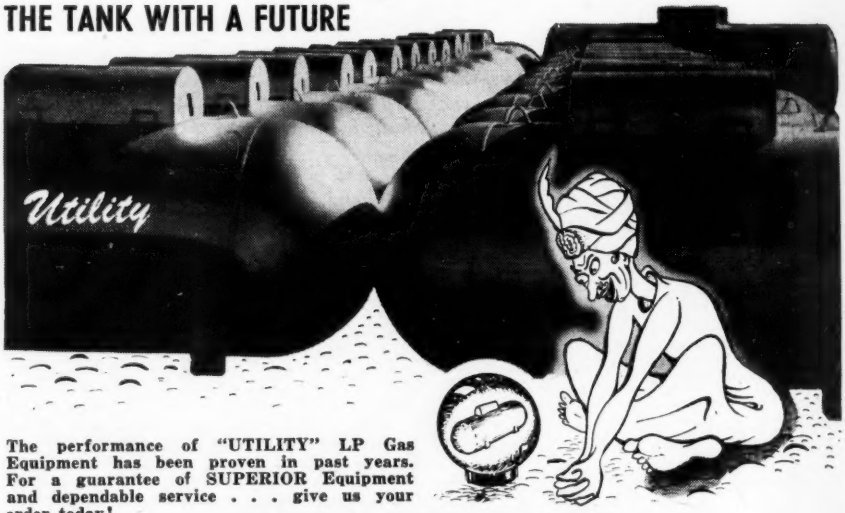


## Pressure Regulator

**Hoke, Inc.,** Englewood, N. J.

**Description:** This low pressure regulator, with body construction of cast iron and all parts machined to precision tolerance, may be used for either single or 2-stage or mixer in-


**THE TANK WITH A FUTURE**




**The performance of "UTILITY" LP Gas Equipment has been proven in past years. For a guarantee of SUPERIOR Equipment and dependable service . . . give us your order today!**

**BUTANE EQUIPMENT CO., INC.**

3301 S. Lamar, Box 1451 Dallas, Texas

# TAPPAN

## ...pioneer in building...pioneer in selling the L.P. GAS RANGE

Specially engineered for its specific job, the Tappan L. P. Range is giving Tappan dealers a double pay-off: (1) Unparalleled acceptance by consumers and (2) A minimum of service calls, with resulting savings and customer goodwill.

**The TAPPAN Stove Company**

*Established 1881* • *Mansfield, Ohio*

stallations. The spring loaded relief valve is diaphragm operated, and safe operation is assured.

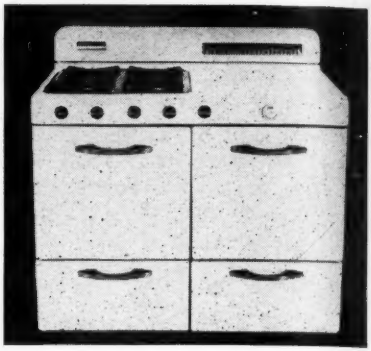
The moulded diaphragm is designed for long, hard action and is not affected by gases, according to the manufacturer. Smooth performance and positive alignment of the valve seat and disc are possible at all times.

## Domestic Range

**The Crosley Corp.,** Manufacturing Div., Cincinnati 25

**Description:** Desgined to strengthen the range structurally, the latest Crosley range features a new, one-piece, structural core which supports the top and contains the ovens and draws, and to which the sides and front of the range are attached.

This range, with receding front from bottom drawer to floor, has an



oven 15⅜" high, 17¼" wide, and 19" deep. Extra thick insulation is provided that permits placing the stove flush against the wall or non-metal cabinets.

The Crosley range can be used with natural gas, manufactured gas or LP-Gas.

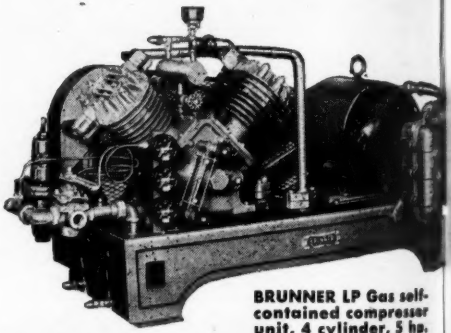

# When you UNLOAD TANK CARS make sure they're EMPTY!

After all liquid petroleum has been transferred from a tank car or tank truck there is still a considerable quantity of vapor left in the tank. This cannot be recovered by a liquid pump. This vapor amounts to from 500 to 1000 lbs. of LP Gas in every tank car unloaded! You pay for this lost poundage as well as its transportation!

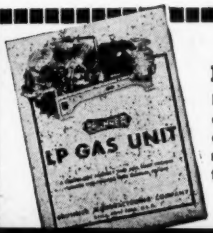
This vapor can be recovered with the Brunner LP Gas Unit, a compressor assembly that pumps volatile liquids and recovers their residue vapor. It is a package unit that is outstanding in speed, efficiency, safety and low cost.

**BRUNNER MANUFACTURING CO.**
**UTICA 1, NEW YORK, U. S. A.**

ARMY E NAVY
BRUNNER
For over 40 years the Symbol of Quality



**BRUNNER LP Gas self-contained compressor unit, 4 cylinder, 5 hp.**




**WRITE FOR THIS NEW FREE BOOKLE**

It describes the Brunner LP Gas U and contains more illustrations, agrams, tables and valuable in mation on the handling of LP G than any booklet ever issued.

# Hidden Ingredients

## IN EVERY SHIPMENT OF SINCLAIR LP-GASES

"Honesty", "Integrity", and "Experience" are hidden ingredients that come in every shipment of SINCLAIR LP-GASES. That is why the name SINCLAIR means more to Sinclair dealers than just another label.

The test of your source of supply is the way it takes care of your requirements during the peak demand season. SINCLAIR plans its production to fill the orders of its dealers. Plan your propane purchases with SINCLAIR now.

SINCLAIR PRAIRIE OIL COMPANY

SINCLAIR BUILDING • TULSA, OKLAHOMA

LIQUEFIED PETROLEUM GAS DIVISION

## BRASS FITTINGS • COPPER TUBING • TOOLS FOR TUBING • VALVES & COCKS

Write For Prices and Information to...

## MIDLAND PARTS & BEARINGS CO.

IRVING, KANSAS

Or 1418-A Grand Ave., Kansas City, Mo.

# THE TRADE

M. V. REED

W. W. Banks, president, **Dallas Tank Co., Inc.**, Dallas, Texas, announces the appointment of Malcolm V. Reed to the office of assistant to the president.

Prior to joining the Dallas Tank Co., Mr. Reed had been head of the engineering and planning department of the Wyatt Metal and Boiler Works in both Houston and Dallas for 15 years.

Mr. Reed's new duties will be of a general administrative type.

L. F. Moran of Worcester, Mass., has been appointed New England sales representative of the **Hays Manufacturing Co.**, Erie, Pa.

Mr. Moran has lived for a number of years in New England where he was associated with the General Electric Co., engaged in various aspects of the manufacture, merchandising, wholesale distribution and sale of electrical appliances.

Edward B. Heyden has been named to head the construction division of the **Graver Tank & Manufacturing Co., Inc.**

Active in construction work since 1920, Mr. Heyden has been associated with The Lummus Co. for the past 14 years. He replaces Lloyd K. Wells, who is retiring to follow personal interests on the West Coast.

The Graver Company also announces the appointment of John E. Fogarty to the post of general manager of the firm's Sand Springs, Okla., plant. He formerly managed the Graver weldment division at the main plant in East Chicago, Ind.

Storage tanks and other fabricated plate products are manufactured at the Sand Springs plant.

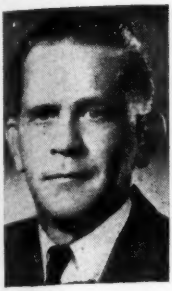
Louis Ruthenburg, president of **Servel, Inc.**, Evansville, Ind., has been appointed to the Labor-Management Advisory Committee of the United States' Conciliation Service.

Mr. Ruthenburg was selected by the United States Chamber of Commerce to succeed David Sarnoff, president of the Radio Corporation of America, who resigned.

R. S. SLATER

Announcement is made by **American Car and Foundry Co.** that R. S. Slater has been appointed manager of tank car sales. As such he will be in charge of sales of tank cars, storage tanks and pressure vessels. Mr. Slater will continue to make his headquarters in New York.

Announcement is also made that J. L. Onderdonk has been appointed an assistant vice president of the company. He will continue to make his headquarters at the ACF Chicago sales office. Mr. Onderdonk has been associated with ACF since 1912.



JESS BLACK

ALBERT WHITE

**Butane Equipment Co., Inc.**, Dallas, announces two recent appointments to key positions in the company. Jess R. Black, who has ascended through the ranks of the company in six years, now heads the organization as general manager. During the war production years, Mr. Black was chief production manager.

In charge of the sales department, newly appointed Capt. Albert D. White hails from Texas A & M College prior to serving several years in the European theatre of operations. Capt. White was a General Staff officer in the Planning Group for D-Day Operations. He is familiar with every phase of manufacturing in the plant. Mr. White will be assisted by salesmen Horace James and James McDade.

Mr. Black extends an invitation to all LP-Gas dealers to visit Booth 17 at the Oklahoma Association convention on Sept. 19, and at company booth exhibitions at the State Fair of Texas, Oct. 5-20.

This year a spirited soft ball team was organized at Butane Equipment Co. by Park E. Johnson, personnel director. The "Tankers," as they called themselves, won their way to the Class A League of Dallas. They played with top-notch ball teams throughout the country to win the Northern League trophy.

At Houston, the "Tankers" entered the Texas State tournament to win two major games. Due to conflicting schedules between the State tournament and the Dallas city tournaments, the Butane Equipment Co. team returned to Dallas to play for city championship.

They won the semi-finals and staged an exciting play-off for the city's title at Dallas Fair Park stadium. They lost the city championship title

**Home of the Kerotest Pacific Co., 3305 East Slauson, Los Angeles, subsidiary of Kerotest Manufacturing Co., of Pittsburgh.**

by one game, but there is a proud exhibition of two handsome trophies in the company reception room.

Mr. Johnson plans a great season for the "Tankers" next year.

A combined product sales training school for district sales and service managers of the Shellane Division of Shell Petroleum Co. was held in July and August under the joint sponsorship of **Servel, Cribben and Sexton,** and the **Ruud Manufacturing Co.** in Cribben's plant in Chicago.

At this week-long school the Shellane men received sales training in all points on the "Universal" gas range, the Servel gas refrigerator and Ruud water heater. These schools are in preparation for 27 sectional meetings for Shellane dealers, which will be held in the next three months in Michigan, Illinois, Missouri, Minnesota, South Dakota, Iowa, Wisconsin, Indiana, Kentucky and Ohio.

In Chicago, the district sales and service men received two days' instruction on the Universal range, one day on the Servel refrigerator, and one day on the Ruud water heater.

When dealer field schools start, each manufacturer will compress dealer sales training to one day meetings which will be staggered over a period of three months. The school program on the Universal gas range was handled under the supervision of A. T. Carrow, manager of LP-Gas range sales for Cribben and Sexton. Literally adding flavor to the school was the complete cooking demonstration by M. A. Ennis, manager of Shellane-Universal sales, who will conduct the 27 dealer meetings.

The history and sales techniques

*Immediate delivery on*

LPG SYSTEMS

Shipments from Bessemer, Alabama, ASME Underwriter Approved Tanks, 125 to 200 pound working pressure, aboveground or underground.

*Eight years' experience in building quality tanks.*

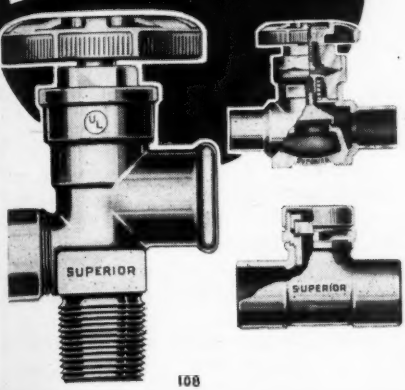
L. P. G. EQUIPMENT COMPANY

108 W. Concord Avenue, Orlando, Florida

P. O. Box 3507, Telephone 5206

*Superior*

# LP-GAS VALVES AND ACCESSORIES




108

**For Bulk Stations, Tank Trucks, and above and below ground systems.**

★ **LP-GAS CYLINDER VALVES** are listed as Standard and for re-examination service by Underwriters' Laboratories, Inc.

★ **GLOBE, LINE AND ANGLE VALVES** — Diaphragm Packless and Wing Cap — in Flare sizes from ¼" to ⅝" O.D.; Sweat sizes from ¼" to 2⅛" O.D.; F.P.T. sizes from ½" to 2".

★ **SIGHT GLASSES**, suitable for any normal LP-Gas pressure. Entire top assembly removable while soldering lines to body.

★ **FLARE FITTINGS**, including Unions, Couplings, Adapters, Elbows, Tees and Nuts — listed as Standard by Underwriters' Laboratories, Inc.

**SUPERIOR**
**VALVE & FITTINGS COMPANY**
**PITTSBURGH 26, PENNSYLVANIA**



*Designed for*

# LP GAS

**NEW ALL ALUMINUM**

## PORT-O-STOVE

**Uses Butane, Propane or any mixture of the two with equal satisfaction. Ideal where small installation is required. Write for full particulars.**

**FUEL SUPPLY ATTACHED HERE**

*Weight*
**Only 5⅜ lbs.**

***Guaranteed against mechanical and material defects***

*Manufactured by*

**ART METAL APPLIANCE CO.**

**3106 PARK AVE. • ST. LOUIS 4, MO.**

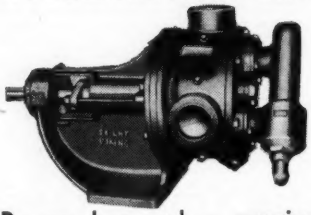
2

WANTED—Linoleum and carpet layer. Good opportunity ... sober, experienced ... of 20 ... 220

WANTED - A Letter From The Man Who Wants To Know How He Can Best Pump

... ad composi- ... position, daytime ... working conditions. Va- ... with pay. The Fred Hahne ... Printing Company, Webster City

LIQUIFIED PETROLEUM GAS



Do you have such a pumping problem?

Do you want to deliver it smoothly without pulsation . . . move it fast with low power consumption . . . do you want to lift the liquid up to its vaporization point . . . do you want to move it any distance either vertical or horizontal . . . do you have limited space for the pumping unit . . . do you want a pump built for your job in the size and style needed?

If any of the above is your problem, ask VIKING today for free folder 2300B and get the complete story about this original rotary "gear - within - a - gear" pump. It is especially adapted for solving such pumping problems.

VIKING PUMPS — FIRST IN AMERICA

See Our Catalog In SWEETS

VIKING Pump Company

CEDAR FALLS, IOWA

of the Servel gas refrigerator were presented by A. D. Howard, assistant sales promotion manager of Servel, who was assisted by Len Walter, of Servel. Arrangements for Servel's participation in the program were handled by J. T. Mooney, Servel-Shellane sales representative. In the 27 field dealer schools, the one day Servel sales seminar will be presented by Mr. Mooney.

Ruud's portion of the sales training program was covered by Frank McFerran.

Newell D. Ely, for 20 years an advertising executive with major agencies in Chicago and Detroit (McCann-Erickson, Doremus, etc.), has purchased from A. W. Moore his partnership interest in Moore & Schacht, Los Angeles agency.

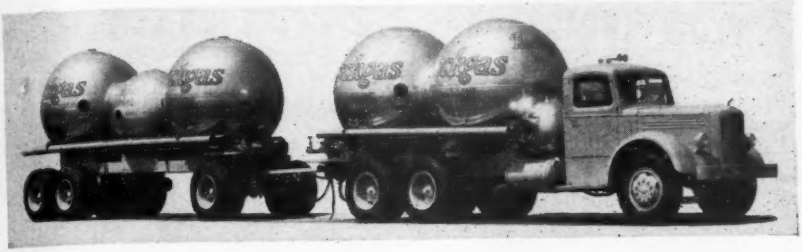
The new firm name, as of Aug. 1, is Ely & Schacht. Offices will remain at 601 So. Rampart Blvd. and the firm will continue to handle general and industrial accounts, with particular emphasis on market research and distribution problems.

Announcement has been made by A. B. Ritzenthaler, vice president, **Tappan Stove Co.**, of the appointment of Gordon D. Boyle as district manager, to be in charge of Kentucky, Tennessee and southern West Virginia.

Mr. Boyle has been with Tappan Stove since 1935 and previously served as sales representative.

Wm. A. Marsteller has been appointed general advertising manager of **Rockwell Manufacturing Co.**, Pittsburgh, it has been announced by A. J. Kerr, vice president of sales.

Mr. Marsteller has been vice president in charge of sales, advertising




This 7400 gal. transport tank unit provides maximum pay load for the maximum allowable road weight.

Built for the Imperial Gas Co.

By

**SUPERIOR TANK & CONSTRUCTION CO.**

6155 So. Eastern Ave. Phone AN 4157 Los Angeles, California

# NOW Our L-P Gas Correspondence Course Is Available For Home Study

***Covering Application and Equipment***

**FOR EMPLOYERS and EMPLOYEES**

*Summary of Subjects Covered*

1. Theory and General Principles
2. Domestic Installation
3. Commercial Installation
4. Transportation and Equipment
5. Safety Rules and Regulations
6. Economics

**PROFIT** By the study of the latest developments, how to balance your summer and winter fuel problem, and the safe installation operation and maintenance of L-P Gas equipment.

**YES** the resident classes for those wishing personal instruction start the 15th of each month.

MAIL THIS COUPON TODAY

NATIONAL L-P GAS INSTITUTE, Tulsa, Okla.

Please send me complete information regarding:

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Employer or Business.....

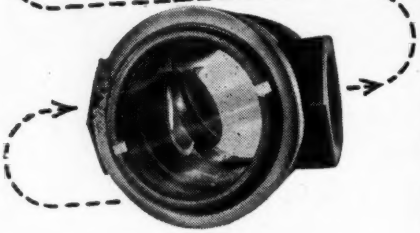
Street Address.....

City, State.....

**National L-P Gas Institute** 1109 S. Main Tulsa 3, Oklahoma

**FLOW INDICATORS**

"positive knowledge eliminates mistakes"



• When an SK Flow Indicator is installed in your pipe line you can know exactly whether a gas or liquid petroleum is flowing, whether flow is slow or fast, and its direction. There is no need to guess. Costly errors can be eliminated; time can be saved. These indicators are widely used on bottled gas trucks to show, by indicating no flow, both when tank on truck is full and when tanks filled from the truck are full and for many other applications.

SK Flow Indicators meet pressure specifications of extra heavy pipe fittings. Glass is tempered plate, thermal-shock resistant and practically unbreakable. For use at pressures up to 250 psi and at temperatures up to 250° F. Flapper type indicators, having threaded connections, are supplied in sizes from ½ to 3 inches and Rotary type from ½ to 2 inches, inclusive.

For complete information write for Bulletin 18-W.

**SCHUTTE & KOERTING CO.**
*Manufacturing Engineers*
**1148 Thompson Street Philadelphia 22, Pa.**


and industrial relations of Edward Valves, Inc., East Chicago, Ind., a subsidiary of the Rockwell Manufacturing Co.

**John W. McNair (right), vice president and general manager of Standard Gas Equipment Corp. of Baltimore, receives the Brand Names Research Foundation golden and centennial "Certificates of Public Service" from A. O. Buckingham (left). The certificates were awarded in recognition of 116 years of continuous service of the brand name "Acorn" and 51 years service of the brand name "Vulcan."**

Thomas E. Ratcliff, 70, retired vice president and treasurer **Standard Gas Equipment Corp.**, Baltimore, died Aug. 7 after a protracted illness. Mr. Ratcliff was a native of Hamilton, Ohio.

Mr. Ratcliff began his career in Baltimore in 1911 in the position of assistant manager of the Baltimore Gas Appliance and Manufacturing Co., which later became part of the present Stanard Gas Equipment Corp.

Gas men attending the AGA convention at Atlantic City are invited to make their exhibit headquarters at the

# QUALITY LPG TANKS

Lancaster stands prepared to help you equip your plant with ample and economical storage facilities to meet the ever-growing demand for liquefied petroleum gas. Lancaster offers you the results of years of experience in design, fabrication and erection of complete bulk plants. This highly specialized knowledge is yours for the asking. You will be the winner in properly designed, trouble-free, durable LP-Gas storage.

Complete proposal drawings and estimates will be submitted to you gladly without obligation. Send your inquiries today for prompt attention.

Bulk Plants
Skid Tanks
Truck Tanks
Gas Plants for Municipalities

◆

Butane
Propane

**LANCASTER IRON WORKS, INC.**
LANCASTER, PENNA.

# GAS APPLIANCE TRUCK

## Pneumatic Rubber Tires—Available NOW

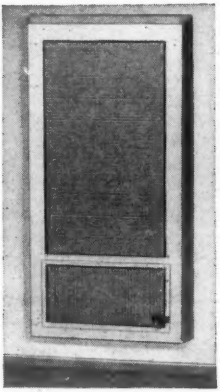
An all purpose, one man truck for cylinders and appliances. No more back-breaking lifting. Tapered body gives operator ample room between handles. Cradle construction accommodates any cylinder up to 100 pounds. Wide Bottom flanges give support for appliances. Web strap (optional) holds appliance rigidly. Rounded handle grips permit skidding from end of delivery truck. Time saving, labor saving, cost cutting. Saves lawns. Write for prices and folder.

**THOMAS TRUCK & CASTER COMPANY**
6726 MISSISSIPPI RIVER KEOKUK, IOWA

# Williams Vented
# WALL WARMOLATOR

***for New Residences.***

***For Butane, Propane or Natural Gas.***



Dual type. 45,000 B.T.U. input. Color, light Ivory. Automatic Temperature control with Wall Thermostat, or for manual control with pilot lighter. Easily installed. Working parts easily accessible. For 2 x 4 inch studs. No pit or basement. Approved by A.G.A. Eligible for F.H.A. loans.
Size of face, 25¼" wide, 50" high.
Size of recess in wall, 23¾" x 48" high.
Projects from wall, 4½ inches.

***Ask for circular, form 211.***

## WILLIAMS
## RADIATOR COMPANY

Sales Office: 3115 Beverly Blvd.
Los Angeles 4, Calif.
Factory: 1821 Flower Street
Glendale 1, Calif.


Commercial Cooking Appliance Center, Booths 422 to 424, which will be provided jointly by the **Cleveland Range Co., Duke Manufacturing Co., G. S. Blodgett, J. C. Pitman & Son Sales Corp. and Savory Equipment, Inc.**

The purpose of this center, beside displaying the new products of cooperating manufacturers, is to provide a comfortable place for those who find conventioning tough and are looking for a place to rest. It will be set up as a rendezvous for commercial gas men who can use it as a message clearing house; also, as a place to meet or locate friends and business acquaintances.

Paul C. Grimes, formerly New England representative prior to his Army service, has been appointed Mid-Western representative for Blodgett Baking and Roasting Ovens, and will cover the states of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, and the cities of St. Louis, Mo., and Pittsburgh, Pa., with headquarters in Chicago, it is announced by the **G. S. Blodgett Co.**, Inc., of Burlington, Vt.

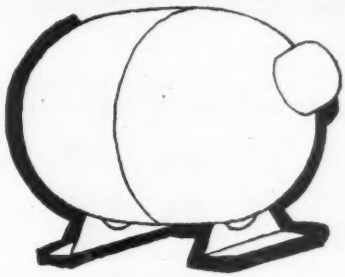
Mr. Grimes has had detailed experience in the specification, sales and utilization of portable ovens for all uses, having, for five years prior to the war, covered the New England states for the company.

A catalogue has been published by **Roberts & Mander Corp.**, Hatboro, Pa., featuring "Quality" steel cabinets and cabinet sinks.

The entire Quality line is featured in this full-color catalog. Among the outstanding features is a full-color center spread showing an ideal modern kitchen.

Also available is an installation manual which gives simple instruc-

TODAY'S $ BEST BUY



Call ☆ US

"Pacific" 100 Gallon Above Ground Propane Tank . . . Fittings enclosed under hinged dome . . . Light Weight . . . Rugged . . . Easily Handled . . . Either Code . . . Immediate Delivery . . . LOW COST.

FOR THE CRITICAL ITEMS TOO . . .

Differential Pressure Regulators — Hot Plates — Water Heaters — Floor Furnaces.

If your quantities can't be filled today, we shall allocate the merchandise fairly and equably.

☆ UTILITY SUPPLY COMPANY

P. O. Box 365—Fresno, California

*Exclusively Wholesale for LPG Dealers*

CLIP THIS AND MAIL TODAY

*if you are not a subscriber to*

**BUTANE-PROPANE NEWS**

1709 W. Eighth Street, Los Angeles 14, Calif.

**SUBSCRIPTION ORDER**

Enter my subscription to BUTANE-PROPANE NEWS to begin with the next issue.

1 Year $2.00 ☐ 3 Years $5.00 ☐

*Check enclosed* ☐ *Please send bill* ☐

NAME_____ POSITION_____

COMPANY_____

STREET CITY ZONE STATE

*We've Been Workin'*

*On—*

**LPG**

**SINCE 1924**

Yes, since 1924 Corken's have supplied Oil and Gasoline Refining plants with pumping equipment. Corken Selected Pumps have handled Butane and Propane from the day it was first produced.

**SPECIALISTS**

*Let us help you with your liquid moving problems.*

Your inquiries and orders will be handled promptly and intelligently by men who understand your problems and realize that SERVICE is of utmost importance. Write for descriptive folders and information on L. P. G. equipment and services.

**CORKEN'S**

L P GAS EQUIPMENT DEPT.
206 E. Grand Ave.
OKLAHOMA CITY 2, OKLA.
Tel. LD 765, 7-6517

tions for installation of the cabinets. It contains helpful suggestions in laying out the modern kitchen. Architects, builders and dealers will find this manual helpful.

**The Bastian-Blessing Co.**, Chicago, through R. E. Poethig, sales manager of the "Rego" division, announces the addition of a new member to the sales staff—Rudolph Walter.

Educated at Crane Tech and Northwestern's School of Business Administration, Mr. Walter spent almost 20 years with the Chicago branch of General Electric X-Ray Corporation.

William E. Curran has been elected a director of the **Rheem Manufacturing Co.**, according to a recent announcement.

He has been a vice president in charge of all manufacturing activities for the company since October, 1943.

## Dallas Again Named NGAA Convention City

The 26th annual convention of the Natural Gasoline Association of America will be held April 23-24-25, 1947, in the Baker Hotel, Dallas, according to a recent announcement of William F. Lowe, NGAA secretary.

Originally scheduled to be held in Tulsa immediately preceding the International Petroleum Exposition, the NGAA board of directors decided on a return to Dallas in 1947 after announcement was made of the postponement of the Exposition until 1948.

In stressing the need for early reservations, Mr. Lowe stated, "The growth in registration in recent years and the difficulty in obtaining hotel accommodations, have made it neces-

# Delta Tank Manufacturing Company, Inc.

**Baton Rouge, La.**
**P.O. Box 1469**
**Phone 3-7416**

**Macon, Ga.**
**P.O. Box 1091**
**Phone 9936**

Universal C. I. T. Credit Corporation has extended to our dealers floor plan accommodations on Butane and Propane consumer tanks. This plan is designed to enable our dealers to carry an adequate stock of tanks at all times at a minimum investment.

We are proud of our part in this program and will be glad to furnish further information if desired.

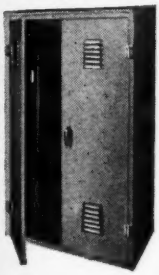
***Contact Us for Consumer and Truck Tanks***

# OXFORD BOTTLED GAS CABINETS

***for Long and Satisfactory Service***

(Right) Dual Hood Type

(Below) Full Size Cabinet



Thousands of Oxford Bottled Gas Cabinets, Full Size, Single Hood and Dual Hood Types are in use in many parts of the country, giving highly satisfactory service. Constructed of heavy metal with a protective coating of paint or galvanized to insure rust resistance, cylinders, valves, regulators, etc., are safely guarded from accidents or weather. Write for prices and details.

## OXFORD LIQUID PROPANE VAPORIZER

Designed for bulk plant installations. Insures vaporized gas in any degree of cold weather. Outstanding superiority is that it is installed OUTSIDE the tank —always accessible. Write for details and prices.

THE OXFORD COMPANY, OXFORD, PA.

HELCO

Now Approved by Underwriter's Laboratories

HELCO Regulator for Butane-Propane Service

**Approved: California Industrial Safety Division No. 2099. Louisiana Liquefied Petroleum Gas Commission. Texas Railroad Commission. Inlet pressure—up to 250 lbs. tank pressure. Outlet pressure—11 in. water column. Capacity—400 c.f.h. Plus. Fittings—inlet P.O.L., outlet ¾".**

***Available for Immediate Delivery***

**On request we will be pleased to send you the performance chart on the HELCO Regulator 100.**

**H. E. Lynn & Co., Inc.**

548 S. Spring St.
Los Angeles 13, Calif.

sary to solicit the aid of all the leading hotels in meeting the requirements. Both the Baker and Adolphus hotels have already agreed to reserve large blocks of rooms and will accept reservations at any time, giving preference to requests for double occupancy."

## Seller's Market Is Tested

JUST how long will the seller's market in home appliances last?

That question is being probed in a practical manner by several leading makers of electrical equipment, who are conducting "guinea pig" tests in some representative cities throughout the country in an effort to find out if all those names on dealers' waiting lists really mean anything.

General Electric, Silex, and Proctor Electric are three of the companies which have chosen certain cities in which to place a supply of products equal to or greater than the anticipated demand, in order to gauge the actual market.

Moving into a selected locale, some manufacturers are taking over the dealers' lists, and notifying each person listed that the appliance for which he indicated a desire is immediately available.

Results of the tests to date have shown two trends: In major appliances, such as ranges, refrigerators, and washing machines, the seller's market is here to stay for some time; in irons, toasters, electric pads and other items generally regarded as minor appliances, the demand is close to being satisfied.

Refrigerators, it was found, made buyers out of more than three-fourths

# Butane & Propane

## Carter

Carter high quality Butane and Propane are unsurpassed as domestic and industrial fuels. Bulk loading points, St. Elmo, Illinois, Seminole and Stonewall, Oklahoma. Wholesale only. Your inquiries are solicited.

**THE CARTER OIL COMPANY**

TULSA, OKLAHOMA

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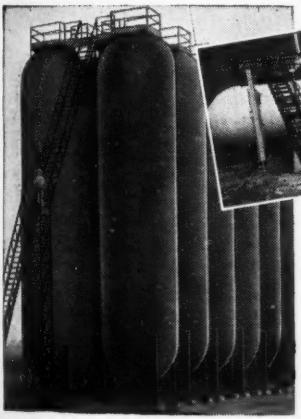
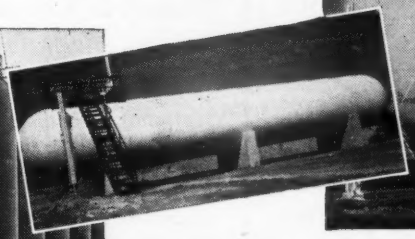
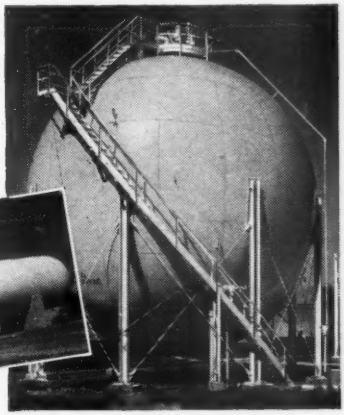
# GRAVER

## BUILDS 'EM ALL







Graver tanks, bullets and spheres for the storage of LPG meet all ASME code requirements. Shop built and field erected, they are available in any size or capacity to meet your requirements.

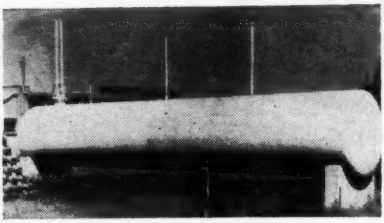
*Fabricated Plate Division of*

**GRAVER TANK & MFG. COMPANY, INC.**

4811-63 Tod Avenue • East Chicago, Indiana

New York • Chicago • Philadelphia • Pittsburgh
Catasauqua, Pa. • Port Arthur, Tex. • Sand Springs, Okla.

# COMPLETE BULK STORAGE SYSTEM



18000 W.G. 200 LB. W.P.
30000 W.G. 200 LB. W.P.
ASME U-69 Code Constructed

*Complete Piping Systems Prefabricated*

**ORDER NOW FOR EARLY DELIVERY**

Gas SOUTHERN Systems

SOUTHERN GAS & EQUIPMENT CO.

TULSA » » OKLAHOMA

BRANCHES: Sapulpa and Enid, Oklahoma . . . Atlanta, Georgia

SOUTHERN GAS & EQUIPMENT COMPANY OF TEXAS—Houston


of the prospects; vacuum cleaners and radios ranged from a cold 20% to a lukewarm 50 or 60% in sales to prospects.

Silex has chosen Peoria, Ill., and its outlying areas as a test location, and has flooded the market there with irons and coffee makers.

Company officials are sufficiently enthusiastic about the idea to schedule it on a two-year basis. They expect through this method to be able to judge the market potential six months in advance.

Proctor has been sampling Baltimore, Washington, Philadelphia, Boston, Richmond, and other large eastern cities. In Philadelphia and Washington, sales were heavy, but initial results in Baltimore showed a contrary trend.

Tentatively, company representatives have predicted a swing from seller's to buyer's market before the end of the year.

Cheering news for old, established firms, and news indicative of growing discernment on the part of consumers is the failure of new, unknown brands to move off dealers' shelves.

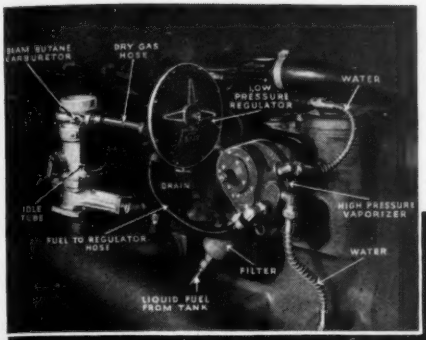
## Wage Stabilization Office Closed in Denver

Wider jurisdiction will be given the Tenth Regional Wage Stabilization Board following the decision of the National Board to close the Denver Regional office on Oct. 1, Chairman Paul L. Kleinsorge announced Aug. 30.

Under the new set-up the San Francisco office will now process all wage adjustment applications formerly handled by the Denver region from the states of Montana, Idaho, Utah and New Mexico. Colorado and Wyoming will be added to the Kansas City Board. All non-ferrous metal cases will fall under the jurisdiction of the San Francisco Board.

# Let's get on the BEAM!

## BUTANE CARBURETION




MORE POWER
FASTER ACCELERATION
INSTANT STARTING
ECONOMICAL

HUNDREDS OF INSTALLATIONS FROM AUTOS, TRUCKS, STATIONARY ENGINES TO CONVERTED DIESELS. *PROVEN FOR MANY YEARS.*

DEALERS • WRITE FOR FULL PARTICULARS

**BEAM PRODUCTS**
*Manufacturing Company*
1206 E. 6TH ST. LOS ANGELES 21, CALIF.
MAKERS OF 'TWIN-BALL' SAFETY CONTROL

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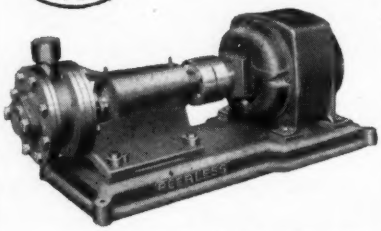
See "LINCOLN Before You Buy .... BUTANE or PROPANE TANKS!"
Ralph Beisner

**BUTANE AND PROPANE TANKS**
Spheres or Cylindrical Type
Transports—Storage—Mobile

*"Built to Your Satisfaction"*
Under API-ASME and ASME Codes

**LINCOLN MANUFACTURING COMPANY**
8680 Otis Street, Southgate, California

# PEERLESS
## *Horizontal Turbine*
(Vane)
## PUMPS



*(formerly Dayton-Dowd)*

## TYPE "XT"
### For BUTANE and PROPANE SERVICE

For high heads, low capacities.
1 to 150 g.p.m. Heads up to 300 lbs.
Speeds to 3600 r.p.m.

- **Freely rotating impeller—no casing contact friction.**
- **Self-priming; no vapor-lock from highly volatile liquids.**
- **Bearing thrust load eliminated by hydraulically balanced twin-inlet distribution system.**
- **Standard model develops up to 200 lbs. in single stage.**
- **Other models for higher pressures.**

## PEERLESS PUMPS
Food Machinery Corporation

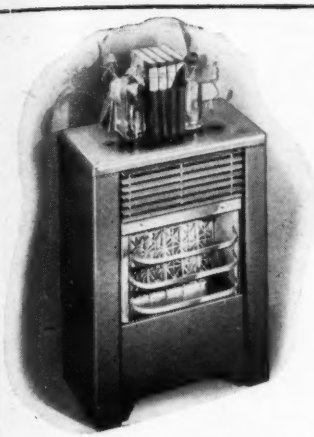
Factories: Los Angeles 31, Calif.
Quincy, Ill. Canton 6, Ohio


## Physical Constants of Low Boiling Hydrocarbons Told

"Keeping up with the times" might well have been adopted as the theme of the August meeting of the California Natural Gasoline Association in Downey, Calif. Robert Matteson presented a table of "Physical Constants of Low Boiling Hydrocarbons and Miscellaneous Compounds," prepared by W. S. Hanna and Robert Matteson of the California Research Corp.; and Dr. Clyde Berg, Union Oil Co. of California, discussed the hypersorption process for separation of light gases.

In discussing the Table of Physical Constants, which lists 39 constants for most of the 66 compounds covered, Mr. Matteson stated that, "Ten or 15 years ago it was impossible to make up such a table without including many blank spaces or, at best, many values of questionable validity. With time, and particularly with the advent of (A.P.I.) Project 44, the number of gaps has been reduced and the reliability of the data increased. To keep up with the rapid changes in the field, it has been imperative to make frequent revisions so that users of the tables could be supplied with the most recent and reliable values for the physical constants."

Dr. Berg stated that hypersorption is a light hydrocarbon recovery process developed primarily for application to those operations in which the use of conventional recovery processes would be uneconomical. It involves contacting the feed gas stream in an adsorption zone with a moving bed of activated carbon which has been previously stripped and cooled; separating from the moving bed in a rectification zone those constituents whose recovery is not desired; and



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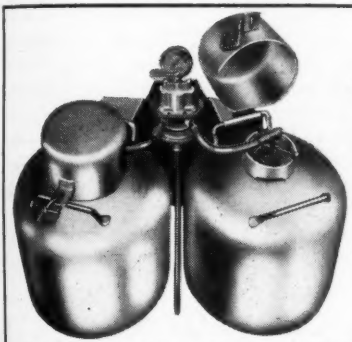

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finally, in steaming and stripping zones, removing from the moving bed of activated carbon the residual hydrocarbons as a vapor and withdrawing and condensing this vapor. The stripped activated carbon is then gas-lifted to the top of the column and the cycle of operation repeated.

The hypersorption process, Dr. Berg stated, provides a new tool for the chemical engineer in his approach to recovery and separation of extremely volatile or low concentration gases. Applications have ranged from the purification of hydrogen to the recovery of natural gasoline, and the recovery of volatile chemicals and solvents has been considered.

The advantage of the process, according to Dr. Berg, over conventional oil absorption processes is in part due to the ability of activated carbon to retain relatively large quantities of volatile hydrocarbons at low pressure. For example, he stated, at approximately 10 psig, one pound of activated carbon will retain 25.2 times as much methane, 13.2 times as much ethane, and 5.5 times as much propane as one pound of a 200 molecular weight absorption oil will.

A second advantage of the process is due to the selectivity exhibited by activated carbon in its adsorbent action, and the technique which has been developed for controlling this selective action.

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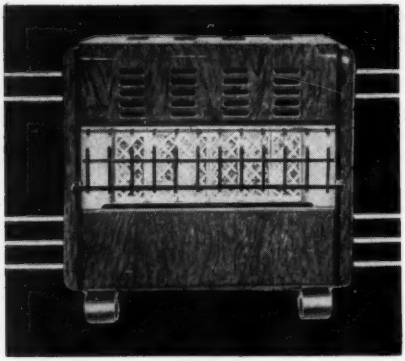

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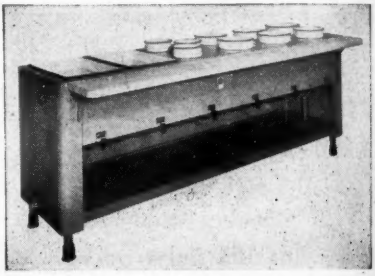

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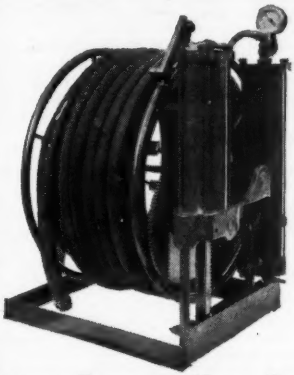

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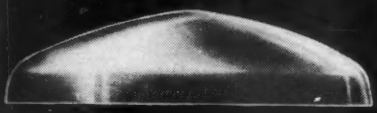

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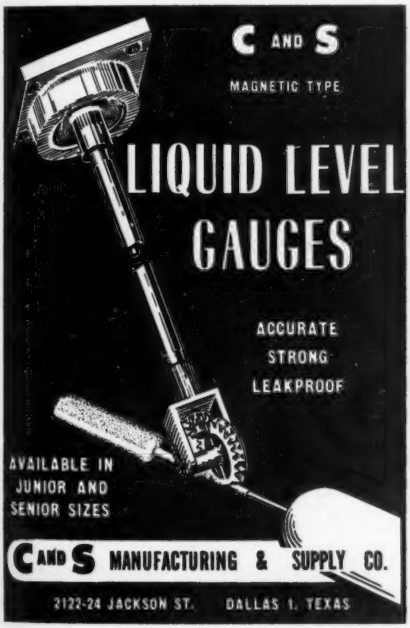


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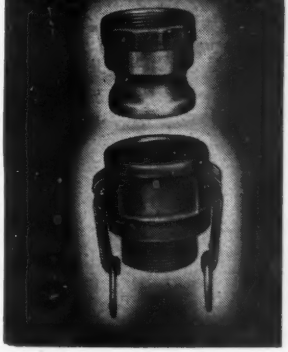

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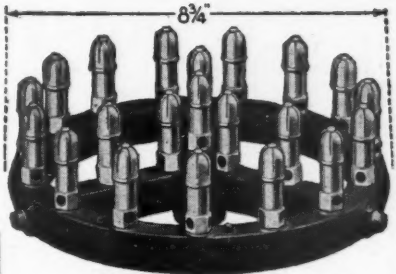


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